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REVIEW OF THE LIVESTOCK/MEAT AND MILK VALUE CHAINS AND POLICY INFLUENCING THEM IN WEST AFRICA



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LIST OF ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ASF	African swine fever
AU-IBAR	African Union – Inter-African Bureau for Animal Resources
AVSF	Agronomes et Vétérinaires sans frontières.
BID	Banque Islamique de Développement
CAADP	Comprehensive African Agricultural Development Program
CBPP	Contagious Bovine Pleuropneumonia
CET	Common External Tariff
CIF	Cost of Insurance and Freight
CIRAD	Centre de Coopération Internationale en Recherche Agronomique
CRDI	Centre de Recherche pour le Développement International
DNA	Data Not Available
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
EU	European Union
FAO	United Nations Food and Agriculture Organization
FAO/SFW	FAO's Sub-regional Office for West Africa
FAOR	FAO Country Representative
FBA	Field Budget Authorization
GDP	Gross Domestic Product
HACCP	Hazard Analysis and Critical Control Points
IAEA.	International Atomic Energy Agency
IDA/ WB	World Bank
IFAD	International Fund for Agricultural Development
MS	Member States
NAIP	National Agricultural Investment Programme
NEPAD	New Partnership for Africa's Development
NFP	National Focal Point
NGOs	Non-Governmental Organizations
OECD	Organization for Economic Co-operation and Development
OIE	World Organization for Animal Health
PPR	Peste des Petits Ruminants
RAIP	Regional Agricultural Investment Programme
RPC	Regional Project Coordinator
SPS	Sanitary and Phytosanitary
TADS	Trans-boundary Animal Diseases

TBT	Technical Barriers to Trade
TCDC	Technical Cooperation between Developing Countries
TCP	Technical Cooperation Programme
TLU	Tropical Livestock Unit
ToR	Terms of Reference
UEMOA	Union économique et monétaire ouest-africaine
UNDP	United Nations Development programme
US\$	United States Dollars
VDN	Viande déshydratée du Niger
VSF	Vétérinaires sans Frontières
WAEMU	West African Economic and Monetary Union

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EXECUTIVE SUMMARY

The Economic Community of West African States (ECOWAS) is an economic, social and political organization of integration of West Africa. In 2011, the ECOWAS population was estimated at 312.24 million inhabitants. The population is relatively young, with 42.3 per cent under the age of 15 years. Approximately 65.5 per cent of the population live in rural areas where agriculture is the main economic activity followed by livestock production. About 80 per cent of the population are Agro pastoralists, of which 50.6 per cent own livestock.). In Sahelian countries like Niger, Mali and Burkina Faso and Guinea, 10 to 30 per cent of households derive their livelihood exclusively from livestock.

Over the last three years (2010 to 2012) the average regional Gross Domestic Product (GDP) was about 647.62 billion US dollars. Livestock sector contribution to agricultural and national GDP is about 16.9 and 6.2 per cent respectively. Livestock play a key role in satisfying household needs and constitute the second export commodity for Sahelian countries such as Niger, Mali and Burkina Faso. About 65.5 per cent of households in the ECOWAS region live and work in pastoral and agro pastoral zones. In Sahelian countries livestock production is the main economic activity and provides food and financial needs of pastoral communities (i.e. Peulh, Touareg, Arab, Toubou, etc.). Livestock stabilizes the socio-economic capability of households by providing reliable income in times when prices of crops are low due to bumper harvest.

The prevailing livestock production systems are: Pastoralism (nomadic & transhumant), Agro-pastoralism, Intensive Dairy Farming and Peri-Urban systems. Livestock farming is an important agricultural activity. In 2011, the animal population in all the ECOWAS Member States (except Liberia) was estimated at or 87.2 million Tropical Livestock Unit (TLU) or 283 million heads comprising 63 128 047 cattle, 7 492 551 sheep, 130 446 369 goats, 11 225 235 pigs and 2 895 861 camels. Herd size varies from one country another and according to the region (pastoral north or humid south) within the countries. In countries like Benin, Togo, Ghana, and Cote d'Ivoire cattle are raised mainly in the northern zone where herd size of Peulh farmers can reach up to about 100 heads. In the south zone, herd size could be as low as one cattle per household plus a few small ruminants.

The main objective of livestock farming in the smallholder system is for subsistence and household consumption, while business appears to be the main objective for the larger farms. In both the Sahel and coastal countries, livestock contributes to food security (household food needs, use of manure to increase soil fertility and crop production, draught power) and also plays key economic (asset protection, generation of savings or bank on foot which is a source of cash to satisfy family's needs as food, school, transport, clothing) and social roles (social status, factor of social integration, employment, ritual ceremonies, events, various gifts).

Current status of livestock/meat and milk value chains

The livestock/meat and dairy value chain comprise six components

Components	Description
Input supply	Purchase and supply of live animals, feed and water, drug and vaccine, equipment and materials
Service providers	Public and private veterinary services, animal feed traders
Production	Feeding and management of livestock on farms and in pastoral areas by owners and herders for production of meat, milk, draught power and manure
Marketing	Purchase and sale of animals at the farm gate and/or at different types of markets - collection, regrouping, secondary, intermediary, terminal, and

consumption markets. Transportation and distribution of livestock to consumers

Livestock/meat and milk value chains are governed by institutional arrangements and supported by various associations of stakeholders including national and international Non-Governmental Organizations (NGOs) which contribute to the extension and dissemination of innovative technology.

Relationship between the components are not clearly formalized (there are even no contracts between the various component stakeholders). Informal relations are linked between actors through transactions between producers, processors, traders, and inputs suppliers' and services providers. Commercial transactions are characterized by physical and monetary flows between producers of livestock, meat and milk on the one hand, and butchers, livestock traders, milk collectors, dairies, hawkers, intermediate in livestock markets, transporters, suppliers of inputs and services on the other hand.

Livestock value chain: there are 22 categories of direct and indirect actors in production, marketing, processing, input supply and services providers and consumers. Informal relations can be established when necessary at the farm or market levels for inputs supply and service providers; at the slaughterhouse for large scale butchers and retailers. No strong relationships exist between livestock importers and exporters owing to a lack of confidence and the difficulty of bank transfers within ECOWAS member states.

The physical flow of livestock (cattle, sheep, goats, camel and pigs) starts with the production of livestock by various producers under the traditional, semi-intensive, and intensive production systems. Livestock marketing or commercialization is carried out through three main corridors: (i) the western corridor where animals leave Mali and Mauritania to supply markets in Senegal, Guinea, Guinea Bissau, Gambia, Liberia and Sierra Leone, (ii) the central corridor where animals leave Mali, Niger (via Burkina Faso) Burkina Faso to supply the Ivory Coast, Ghana, Togo and Benin markets and (iii) the Eastern Corridor or Corridor of Nigeria where animals leave Niger and Burkina Faso to supply Nigeria, Benin and Togo markets. This corridor also receives animals from Chad and Northern Cameroon. In addition to the three corridors within the ECOWAS zone, there is the corridor of Algeria where camels and small ruminants are exported to Niger and Mali.

Meat value chain: In the ECOWAS zone, meat production is mainly from the exploitation of local livestock breeds (cattle, sheep, goats, camels and pigs). In 2011, meat production in the region was estimated at 2.1 million tonnes. To meet domestic demands about 1 60 948 tonnes of meat were imported by the various countries that year from European and Latin American countries. Livestock dressing percentage varies according to species and breeds. Average carcass yields in the region are; (i) 40 to 55 per cent for cattle, (ii) 48 to 57 per cent for sheep, (iii) 48 to 60 per cent for goats, while average carcass weights are: 117, 13, 11, 44 and 170 kg respectively for cattle, sheep, goat, pig and camel.

Post-processing meat losses are difficult to estimate, because in many countries uncontrolled slaughtering is about 60 to 70% of national slaughtering. Post-processing losses of meat generally consist of total and partial condemnation due to diseases and cachexia. Losses resulting from putrefied unsold meat are due to the weakness of the cold chain (lack of refrigerator, power outage, etc.).

In several countries, abattoirs are not equipped with cold storage rooms and even when available are of limited and insufficient capacity. The weakness of the development of the cold chain could be justified by the eating habits of West African populations who prefer fresh and hot meat than frozen meats.

Milk value: In general, the duration of lactation of local breeds is 6 to 9 months for cows and 1 to 3 months for ewes and goats for which the daily milk production is less than 0.5 litres. Milk production levels of local breeds are very low less than 2 litres per day, except for a few breeds such as: Except taurine Kouri (Niger, Nigeria), zebu Azawak (Niger, Mali, and Burkina Faso), Gudali (Niger, Nigeria), Maure (Mali, Senegal) and Bounadji (Niger, Nigeria). The average milk production per lactation is about 200 kg for N'Dama breed, 373 - 450 kg for Mbororo, Djelli, Gobra, 800 to 1 100 kg Kouri, Azawak, Bounadji and Gudali breeds and 3 215 kg and more for crosses and exotic breeds. The dominant system of milk production is traditional. The national production is consumed locally by producers and neighboring people. During the rainy season, the potential of milk production is higher but the collection process is weak.

A total of 5.2 million tonnes milk equivalent were produced in 2011 and importation of milk and milk products was estimated at 347 868 tonnes. On the basis of a daily consumption recommendation of 62 litres /person/year, milk production in the region covers only 26 per cent of the demand. The internal trade flow of milk is between rural and urban areas. In spite of the high potential of milk production of the Sahelian countries, the main transaction is between ECOWAS member states and European, American and Asian countries.

The relationship are even established between farmers, cooperatives and centres for milk collection, milk collectors, some 250 Milk Processing Units and retailers, milk importer and exporters. The relationship between inputs suppliers and services providers are the same as for the livestock/meat value chain. The physical flow of milk and milk products is exercised through.

- Traditional circuit exclusively used for fresh milk produced locally
- Market circuit for milk and milk products from producers through various intermediaries including processors, traders and finally to the consumers.
- Imported milk circuit that is regulated to fit into national plan forecasts of demands, trade balance and over all national and international economic situations

It is difficult to estimate milk post-harvest losses because of household consumption and the un-regulated and poorly controlled milk processing industry. The losses are high during the rainy season due to weaknesses of collection scheme and cold chain, inaccessibility of the zone of production, weakness of the organization of the producers, lack of development of dairy industry, and limited milk storage capacity. The milk produced is mainly directed towards home consumption, with the balance processed and sold by Fulani women in villages and urban households or at weekly markets. Processing units generally import milk powder which can be stored easily.

Production and current demand of meat and milk

Production input factors comprise: local cattle, sheep, goat, camel, pig and goat breeds for meat, and exotic breeds for milk production; locally produced animal feeds; and imported veterinary drugs. The cost of these inputs and the resulting livestock products, vary seasonally and from one country to another.

Meat production and demand: Livestock is transformed into meat which is processed into dried, grilled, and cooked meat. Demand for meat was about 3.73 million tonnes in 2011 when the total production was estimated at 2.01 million tonnes. This regional production covers only 54.1 per cent of the population needs leaving a deficit of about 1.71 million tonnes in 2011 and 1.83 million tonnes in 2012. To cover a part of meat demand in 2011, the region imported 195 247 tonnes of meat from Europe, America and Asia and another 100 353 tonnes of meat from intra-regional movement. On the basis of population and production figures, per capita consumption is about 8.4 kg of meat (all category of meat included). The regional per

capita gap was estimated at -4.5 kg with the highest per capita gaps of (-10.8 kg) for Cote d'Ivoire and (-10.5 kg) for Guinea Bissau.

Milk production and demand: In 2011 milk production was estimated at 4.92 million tonnes of milk equivalent while the demand was about 18.71 million tonnes of milk equivalent. The relevant figures for 2012, were: 19.82 million tonnes for the demand, and 15.78 million tonnes for the production. In 2011, production covered only about 26.30 per cent of demand, with an estimated gap of -13.8 million tonnes of milk equivalent.

Per capita consumption figures derived from the above were 8.4 kg of meat (all category of meat included), and about 18.9 litres/person/year, and are lower than the recommended requirements of 12 kg of meat and 62 litres of milk. The deficits are partly covered by imported milk, live animals and frozen meat, the latter for coastal countries. The produced and imported milk are processed into various sub products (yogurt, butter, cheese, etc.).

Infrastructure - equipment and investment

The low level of meat and milk production is in part due to poor infrastructural development and a lack of the required equipment for the production, transportation, processing and marketing of livestock and livestock products. The required infrastructure and equipment are: livestock markets, cold rooms for meat, livestock trucks, refrigerated trucks, milk collection facilities, milk processing units (dairies and mini-dairies, refrigerated trucks for milk, vaccination facilities, watering points and grazing land. The main investment and equipment required for livestock/meat and milk production, processing and commercialization are:

- **Production:** land, feed and feed stores, housing, machinery and equipment, water source, breeding stock, health care facilities, capital, feed and feed stores,
- **Processing:** abattoirs, meat and dairy processing units, cleaning and disinfection equipment, cold storage facilities, capital.
- **Commercialization:** livestock markets, transport, storage, collection centre, vans and trucks, capital.
- **Services/equipment:** generators, refrigerators and deep freezers (for storage of vaccines and biological specimens for post mortem), laboratories, skilled labour, capital.
- The required infrastructure and equipment in order of priority are: (1) livestock markets and abattoirs, (2) milk collection centres, (3) cold rooms for meat storage, (4) refrigerated and isotherm trucks, (5) mini dairies and livestock truck, (6) watering points (but they are prior in all Sahelian countries), (6) modern dairy and (7) grazing routes for the transhumance system, (the latter for Sahelian countries).

A number of national and regional projects and programmes were developed and implemented to address the investment needs of the livestock sector, and will require about 812.007 million \$US for the national level investments. The current regional projects and programmes comprise activities focused on: i) governance of veterinary services, (ii) natural resources management and conservation, (iii) animal health and (iv) livestock value chain development.

Current policies on livestock/meat and milk value chains and identified gaps

The exploitation and management of natural resources are governed by policies and strategies of ECOWAS Member States. These policies in general cover environmental protection, agricultural development and food security, and are based on local laws, regulations and strategies and revolve around:

- Policy on local authorities and land management (Benin, Burkina Faso, Niger, Burkina Faso);

- Rural Code and Land Tenure (Benin, Niger);
- Rural and agricultural development (Benin , Guinea Bissau , Niger);
- Management and protection of forests and wetlands (Burkina Faso, Cote d'Ivoire, Mali);
- Water Code / Water and Sanitation policy (Burkina Faso, Guinea , Mali, Niger);
- Protection of the Environment (Benin , Burkina Faso, Niger, Sierra Leone);
- Animal Health (Ghana, Mali , Niger, Burkina Faso, Benin, Senegal, etc.);
- Transhumance, pastoral development and natural resources management (Guinea, Mali, Niger, Senegal);
- Livestock Development policy (Guinea Bissau , Niger , Togo , Senegal);
- Food Safety strategy (Burkina Faso, Guinea Bissau, Senegal, Sierra Leone, Togo).

At the regional level, treaties, decisions and regulations are adopted to protect and facilitate the development of livestock within the physical and political context of region. The main policy focuses are:

- The ECOWAS Agriculture Policy and its action plan of livestock transformation and development through the value chain approach,
- Treaties and regulations on Transhumance to facilitate livestock movement and access to good forage while avoiding natural resources utilization conflicts especially in the coastal areas that attract Sahelian livestock during the dry seasons.
- Decision C/DEC. 8/6/89 relative to the adoption of the ECOWAS support programme on animal diseases control.
- Regulation C/REG 21/11/10 on harmonization of the structural framework and operational rules pertaining to the health and safety of plants, animals and foods in the ECOWAS region.
- Policy incentives to producers and consumers are: (i) Support to local production, (ii) tax measures in favour of the livestock sector, (iii) incentive measures for the processing and marketing and (iv) measures to protect animal health.

Policy disincentives measures are: (i) the prevention of un-authorized and clandestine livestock slaughter and the sale of prohibited products. These measures are appreciated by consumers but discourage butchers, (ii) the fixing of official dates when transhumant herds should be back to their original point of departure is welcomed by the farmers but unappreciated by herders and (iii) the prohibition of free movement of livestock during crop growing period.

There is no official policy document on credit services for livestock producers in several West African countries. The International Trade policy is an instrument of economic growth and poverty reduction. In the WAEMU member states, the Common External Tariff (CET) instrument rests on a categorization of rights and permanent taxes. The vision of the ECOWAS is focused on a free economic exchange between countries.

To regulate livestock and other economic activities many acts, regulations and laws governing the value chain in different countries were enacted in order to facilitate free animal movement in the space. For example, the 21st ordinary session of the heads of States Conference held in Abuja on 30-31 October 1998, took the Decision/DÉC.S/IO/98 relative to the regulation of the transhumance between ECOWAS Members States.

The major constraints requiring policy interventions

- ✓ **Primary production constraints:** inadequate grazing areas, poor feed and limited feed manufacturing facilities, poor access to watering points, high morbidity and mortality, unimproved breeds

resulting in low milk production, poor access to credit, scarcity and limited access to drugs, vaccines and animal semen, poorly organized producer associations and the resultant weak institutional and operational capacities.

- ✓ **Processing and storage/ Infrastructures and equipment constraints:** dilapidated slaughter houses and slabs /equipment, lack of cooling facilities and storage (cold rooms) for meat and milk; inadequate infrastructure and/or lack of processing facilities (abattoirs, equipment for meat and milk processing); inadequate capacity in handling and processing of various products; lack of funding or credit facilities for processing activities; lack and / or poor access to energy sources; lack of technical skills (slaughterhouses, butchers and other categories of actors); lack of facilities for the preservation and processing of milk; lack of modern system of collecting and processing milk; lack of appropriate infrastructure for meat processing (abattoirs, butchereries.); inadequate packaging of meat(kilichi) and milk (Tchoukou and Wagashi local cheese); inadequate meat stalls and lack of modern butchers.
- ✓ **Marketing and transport constraints:** lack of standard pricing systems; inappropriate marketing facilities (lack of livestock market and information systems on livestock markets); weakness of livestock products protection vis-à-vis of importation and unfair competition of subsidized imported meat; low customs taxes on imported livestock products (less than 20% of customs duties); multiplicity of unauthorized or illegal taxes; weak milk collection and distribution networks; inappropriate vehicles and equipment for transporting live animals, meat and milk (e.g. milk churns, crates, refrigerated vans etc.); high cost of transporting livestock and livestock products; poor road infrastructure; lack of credit facilities (lack of specialized agricultural banks, high rate of interest, difficulty to access credit); limited capacity of owners to access market-related information (system of information on livestock market); low purchasing power of consumers; poor infrastructure for the conservation and storage of milk (cold chain, milk collection centres); inadequate material and equipment for the collection, transportation, processing and marketing of meat and milk
- ✓ **Constraints linked to poor institutional and organizational capacities of Producers' organization:** inadequate technical, financial and professional human resources for the supervision and training of stakeholders engaged in livestock / meat and dairy value chains); a lack of knowledge and capacity to enforce regulatory texts due to a high level of illiteracy of livestock producers; weakness in the organization and specialization of stakeholders; lack of synergy and coordination between different stakeholders (producers, processors and importers); absence of Centres for Training Professionals in meat and milk processing and the consequent poor knowledge of meat processing techniques; poor milk handling techniques of herdsmen; insufficiency or lack of skilled technicians and logistics for effective Artificial Insemination.
- ✓ **Institutional and socio economic constraints:** Absence of a defined policy on livestock, meat and milk value chains; weak involvement of stakeholders in the formulation of policies; lack of policy initiatives to support production e.g. input subsidies; inadequate budget allocation to the sector, weak enforcement at national and regional levels of political decisions (Decision A/DEC.5/10/98 of 31st October 1998) regulating transhumance between ECOWAS member states; lack of appropriate policy and legal framework for the protection and management of grazing lands, cattle tracks and watering points; lack of policy on genetic resource conservation and the use of exotic pure breeds and their crosses; lack of conducive and supportive policies for private sector participation; poor implementation of legislations, international norms, regional decisions, treaties and regula-

tions pertaining to livestock health; bureaucracy and multitude informal barriers/taxes to livestock and meat trade; lack of relevant statistical data.

Suggested policies for smooth operation of livestock/meat and milk value chains

Policy proposals for the harmonious development of value chains are focused on the:

- development of pastoral infrastructure and equipment (Watering points, vaccination crushes, migratory routes)
- intensification and diversification of the livestock production (subsidizing semen and inputs intended for producers, creating of animal feed industry)
- protection of local production by : (i) instituting a tariff regulation mechanism on imported livestock products (ii) increasing and implementation of the ECOWAS External Tariff of 35 per cent of CIF and (iii) taking policy measures to enhance fair competition among local production and imports,
- livestock marketing and processing infrastructure and equipment (livestock market, abattoirs, meat and dairy industry) and respect of SPS norms, legislative and regional texts on (i) promoting bio-security along both value chains and in particular primary production and processing (adequate abattoirs, meat storage and processing units, milk storage and processing units, livestock, meat and milk transport norms and facility and (ii) fight against non-tariff barriers in ECOWAS zone,
- Financing livestock value chains development by: (i) Developing public private sector partnerships; (ii) Instituting livestock development funds; (iii) simplifying procedures for creating Marketing Information Systems; (iv) creating conditions for the emergence of new classes of livestock sector entrepreneurs; (v) facilitating access to credit to value chains actors for the development of animal feed industry and inputs subsidies
- Strengthening research and extensions services (local breeds characterization, genetic improvement and TAD control),
- Facilitating livestock data collection and analysis (Livestock statistics) by harmonizing livestock census methodologies and livestock market information systems,
- Capacity building of stakeholders: through the institutionalization of stakeholder dialogues (public - private dialogues, sensitization, conflict resolution), organisation and specialization of stakeholders (in cooperatives, associations, unions, federations, inter professional according to the component of each value chain).

Specifically for each value chain, the suggested policies are as follows:

Policies for livestock meat value chain

- Promotion of small scale fattening programmes. (through training on production, marketing and business entrepreneurship))
- Feed preparation, storage and use for fattening animals
- Training and capacity building on the slaughter process including the hygiene component
- Construction and rehabilitation of slaughter houses and cold rooms for meat storage
- Marketing infrastructure improvement
- Livestock and meat transportation improvement
- Increased awareness of regulations (e.g. SPS, ECOWAS international certificate, etc.)
- Specialization of value chain actors
- Removal of unnecessary barriers to trade and
- Measures encouraging the development of local meat and milk industries and their protection from unfair competition of imported products.

Policies for Milk value chain

- Promotion of mini-dairies
- Feed preparation, storage and use
- Genetic improvement through AI and other support services
- Milk collection schemes and cold chain facilities
- Formation of cooperatives.

Prioritized areas of interventions

The prioritized areas are:

- Harmonization of methods for Livestock Data Collection and Analysis for a reliable livestock information data base (livestock census, System of information on livestock market, data on biomass)
- Rehabilitation and construction of infrastructure for production (watering points, vaccination crushes, rangeland demarcation, transhumance routes)
- Support to producers to improve production and productivity including Genetic improvement of local breeds, animal diseases control, access to credit, animal feed improvement, and various inputs supplies Rehabilitation and/or construction of infrastructure and equipment for processing and marketing (abattoirs, livestock markets, milk collection centres, milk processing units, specialized butchers shops)
- Definition and diffusion of national and regional policies on pastoral land management (laws and regulations on land tenure, transhumance), transport of livestock products (live animal, cold chain for meat and milk), livestock research (animal feed, local breeds characterization) and dissemination of research results on livestock products packaging, conservation and storage
- Adequate budget allocation to the livestock sector and facilitation of access to credit (creation of specialized banks, provision of low interest loans, creation of Livestock Development Funds)
- Organization, specialization and capacity strengthening of different stakeholders along the value chain
- Strengthening linkages between producers, veterinary services providers (TADs control and monitoring), input suppliers /processors /and traders.

Suggested projects and programmes by ECOWAS Member States

As summarised in the Table below, a total of 49 projects which covered the areas of genetic improvement, and the provision of equipment and infrastructure for livestock production, marketing and processing were proposed for implementation with an estimated cost of \$US 2.602 billion.

Countries	Projects	Project Areas	Budget (millions \$US)
Benin	7	Ruminants and pig development, conservation of genetic resources and milk processing	191.85
Burkina Faso	9	Livestock value chains development –animal feedstuffs production & crop residue utilization projects	651.00
Cabo Verde	5	Livestock improvement and strengthening of the livestock sector	2.72
Côte d'Ivoire	3	Improvement of livestock/meat value chains	16.35
Gambia	1	Improvement of the meat value chains	109.94
Ghana	1	Improvement of the Milk Value Chains	57.54
Guinea	3	Livestock, meat and milk value chains development	63.84
Guinea Bissau	5	Development of livestock value chains, livestock statistics and institutional strengthening	21.68
Mali	1	Improvement of livestock, meat and milk value chains	169.53
Niger	2	Improvement of livestock, meat and milk value chains	88.04
Nigeria	4	Livestock/meat and Dairy Development Agenda (Mid-term: three to seven years) Projects:	691.74
Senegal	2	Development of local livestock, meat and milk value chains	407.00
Sierra Leone	2	Livestock improvement project	50.50
Togo	4	Development of livestock, meat and milk value chains; institutional and capacity development of stakeholders	80.68
ECOWAS	49		2 602.42

Source: Field data compiled from national reports (2013)

Suggested project areas at the regional level - Based on the areas of intervention, the suggested national projects and in order to meet domestic demands, the following six areas of interventions are suggested for implementation at the regional level.

- Improvement of Livestock statistics: the objective is to have reliable statistics through the use of harmonized methods of data collection and analyses, the organization of regular livestock census, the development of information systems on livestock markets, and the collection of data on biomass,
- Livestock infrastructure and equipment development: the objective is to improve livestock production and processing by constructing watering points, modern livestock markets, modern slaughterhouses, range lands and demarcated grazing routes (to reduce conflicts between herders and agriculturalist), animal feed industries, vaccination parks or facilities (control of TADs), milk collection centres, equipment and facilities for livestock and livestock products (meat and milk) transportation, storage and processing.
- Characterization and genetic improvement of local livestock breeds: the genetic improvement will target local breeds that have demonstrated the potential for improved meat and milk production.
- Monitoring and control of Trans-boundary Animal Diseases (TADs) (CBPP, PPR and African Swine Fever).
- Institutional Strengthening and Capacity building of Value chains stakeholders: the objective of the programme is to contribute to the sensitization and specialization of value chain stakeholders, structuring them organizationally and improving their institutional and operational capacities (hygiene and biosecurity, lobbying and leadership).

- f. Elaboration and implementation of policies for livestock/meat value chains improvement: policies that will facilitate access to credit, improve livestock and livestock products transportation, regulate taxation, remove informal barriers, and protect local products and industries.

Policy instruments and mechanism of implementation

Policy Instruments: In order to support the implementation of regional projects, some key political decisions would have to be taken at the regional level in the form of policy instruments in harmony with existing Acts, and based on ECOWAS initiatives on:

- Creation of a regional agriculture bank,
- Regulations on transportation of live animals and livestock products.
- Regulations on local products protection
- Budgetary allocations commensurate with the importance of the livestock at national and regional level,
- Creation of a Livestock development fund
- Organization and specialization of different stakeholders along the value chain, strengthening the capacity of stakeholders and strengthening linkages between production and services providers, input supply/processing/market.
- Zero rating tax regime for value added dairy products among ECOWAS countries and subsidy of animal feeds and equipment, to allow specific dairy related inputs to be duty-free.
- Duty free importation of raw and packaging material, the provision of special tax-incentives for licensing, quality production, setting up of corporate dairy farms and processing units. This will create livelihood opportunities in the regions and increase milk supply.
- Implementation of mechanisms for collecting tax on animal products importation, and the removal of informal barriers
- Elaborating and implementing a regional policy on meat and milk importation

Mechanism for incorporating identified programmes in key documents of national policies:

The suggested projects would be incorporated at national and regional levels into National Agriculture Investment Plans (NAIP) and Regional Agricultural Investment Plan (RAIP) respectively.

At national level and according to NAIP and ECOWAP, the suggested projects are well articulated to NAIP objectives and its initial axes of intervention. Project implementation will be supported through the NAIP resources mobilized from development partners, and will undergo a mid-term and final evaluation using the NAIP monitoring and evaluation instruments.

At the regional level, the operationalization of ECOWAP/CAADP was translated into the development of action programmes targeting six themes: (i) water management, (ii) management of other shared natural resources, (iii) sustainable development of farms, (iv) market and supply chains, (v) prevention and management of food crises and other natural disasters and (vi) institutional strengthening. All the suggested regional projects are well aligned with the ECOWAP themes and RAIP programmes.

I. INTRODUCTION

ECOWAS is an economic, social and political organization pursuing the vision of an integrated West Africa. The population of this vast economic block is about three hundred million. The demand for meat and milk was estimated at 3.84 million tonnes of meat (12.3 kg per capita) and 19.83 million tonnes of milk (62 litres per capita) in 2012. This demand for these products increases annually at about 4 per cent. Nigeria accounts for more than half of the population of ECOWAS and covers less than 50 per cent of its own needs for animal protein. The current Economic situation in Nigeria indicates that domestic supply of animal protein is growing at 1.8 per cent per annum while the overall demand is estimated to be rising at 5.1 per cent annually.

Nearly all of the ECOWAS Member States, except for Niger, Mali and Burkina Faso, have to import livestock and livestock products in order to satisfy their respective demand for animal protein. This means that hundreds of millions of US dollars are spent on the importation of meat and milk to satisfy local demands. Yet the region has a significant livestock population which, if well-structured and better managed can produce products that meet local demand. For that to happen, the principles of complementarity and synergy between states have to be implemented.

In the recent past, several studies identified constraints hindering the development of livestock value chains and proposed solutions which need to be tested and turned into policy instruments. Taking into account comparative advantage of the Food and Agriculture Organization (FAO) in providing technical support for the development of value chains and relevant policies, the Department of Agriculture and Rural Development of the ECOWAS Commission requested assistance through a Technical Cooperation Programme (TCP) to facilitate the process. In response, FAO developed the project '*Support to policy initiatives for the development of livestock/meat and dairy value chains in West Africa project*' (TCP/SFW/3402).

The objective of the TCP is to review livestock/meat and milk value chains and take stock of policies influencing them at the level of ECOWAS and its Member States. As part of the project implementation, a study on the current status of value chains and policies was carried out in each country of the ECOWAS Region. More specifically, the study addressed the following issues:

- Current status of livestock/meat and milk value chains
- Inventory of current policies on livestock/meat and milk value chains and gaps identification
- Projects and programmes for the development/enhancement of livestock/meat and milk value chains and priority investment plans for each value chain
- Policies for facilitating the development or enhancement of livestock/meat and milk value chains and mechanism for embedding them in key national policy documents

The studies were carried out in each of the ECOWAS Member States (except Liberia) by national consultants supervised by a team comprising national focal points in each country and a project team based at the ECOWAS Commission and at the FAO Sub-regional Office for West Africa (FAOSFW).

Each National consultant produced a national report which was presented to different stakeholders and validated at national workshops. The present document is a synthesis of fourteen national reports, and is structured in eight (8) chapters:

- Socio-economic context of the meat and milk value chains
- Description and mapping of the meat and milk value chains
- Infrastructure and other support services

- Marketing, trade and pricing
- Governance and institutional arrangements
- National or regional project from which the Value Chains (VC) benefit
- Policies and strategies
- Constraints affecting meat and milk value chains and proposed solutions

A general introduction and conclusion and some recommendations are also provided.

2. SOCIO-ECONOMIC CONTEXT OF THE MEAT AND MILK VALUE CHAINS

2.1 Animal population and livestock farming objectives in the ECOWAS zone

Livestock farming is an important agricultural activity. In 2011 livestock population in the ECOWAS zone was estimated at 283 million heads (cattle, sheep, goats, camels and pigs) or 87.2 million TLU (Table 1), and cattle represented 58 per cent of the ECOWAS livestock population.

The main objectives of producing livestock and its products (live animals, meat, milk, skins, leather and manure) in the smallholder system are for subsistence and household consumption, while the commercial farms pursue livestock production as a business concern. In both the Sahelian and coastal countries livestock plays key roles in: (i) contributing to food security (household consumption of its products, increased crop yields through the use of manure to fertilize the soil, the use of draught power and income generation for workers), (ii) economic growth (assets protection, generation of savings or bank on foot which is a source of cash to satisfy family needs for food, school, transport, clothing), (iii) social well-being (livestock for social radiance, social integration and employment, ritual ceremonies, gifts and various events).

By contributing to satisfy domestic demand and reduce dependence on imported meat and milk products, livestock contributes to improve livelihoods of pastoralists and small-holder producers. In urban and peri-urban production systems of the coastal countries, which directly supply major urban consumption centres, the primary production objective is income generation for the farmers, while in the Sahelian pastoral systems in countries like Niger, Mali and Burkina Faso, the main objectives are mainly for household and domestic consumption (small ruminant fattening for Tabaski, Christmas, Ramadan and Baptism) and secondarily for export.

Table 1: Livestock population in ECOWAS Member States in 2011

Countries	Cattle	Sheep	Goat	Pig	Camel
Benin	2 058 000	825 000	1 640 000	383 000	0
Burkina Faso	8 566 448	8 490 513	12 712 705	2 210 565	17 317
Cabo Verde	22 652	11 321	179 676	80 893	0
Côte d'Ivoire	1 582 652	1 700 303	1 331 687	408 000	0
Gambia	398 472	143 939	302 878	42 384	0
Ghana	1 498 000	3 887 000	5 137 000	568 000	0
Guinea	5 174 939	1 722 729	2 060 664	99 875	0
Guinea Bissau	1 325 412	304 745	649 084	343 680	0
Mali	9 721 328	1 308 448	18 216 005	75 765	940 964
Niger	9 552 611	10 018 860	13 231 430	3 955	1 654 805
Nigeria	19 053 199	38 376 022	67 292 343	6 282 245	278 005
Senegal	3 346 000	5 700 000	4 880 000	364 325	4 770
Sierra Leone	517 000	682 000	803 000	47 364	0
Togo	311 334	1 750 671	2 009 897	315 184	0
ECOWAS (animals)	63 128 047	74 921 551	130 446 369	11 225 235	2 895 861
ECOWAS (TLU)	50 502 438	11 238 233	20 871 419	1 683 785	2 895 861
Per cent	57.9	12.9	23.9	1.9	3.3

Source: Field data compiled by the consultant from national consultants' reports (2013)

2.2 Prevailing livestock farming or other animal production systems

West African agriculture is predominantly smallholder and is characterized by three main farming systems: crop only, livestock only and crop-livestock systems with some various sub systems (Table 2). The systems of production vary between the Sahelian and humid areas. In Sahelian countries as Niger, Burkina Faso, Mali, Senegal, and the northern parts of Nigeria, Benin and Togo, livestock is produced under two major production systems: the sedentary mixed farming production or agro-pastoral production system and the nomadic and transhumant (pastoral) system. In both systems, women play a significant role in livestock production. Throughout the region, the major livestock production system is the mixed farming (crop-livestock system or agro pastoral) which involves mainly cattle (92 per cent in Benin, 74 per cent in Ghana, 67 per cent in Senegal and 62 per cent in Niger), and to a lesser extent sheep, goats and pigs while camels are raised in mainly in the pastoral system.

In the crop-livestock system, different species are exploited in extensive, semi intensive and intensive systems of production. The extensive sheep and goat production system, also known as traditional small ruminant production system, consists largely of free grazing village flocks of different species normally exhibiting poor productivity. The intensive production system is found in the villages, urban and peri-urban areas where sheep and cattle fattening is highly developed and practiced mainly by women. The private smallholder around cities practices the peri-urban sub system where cattle are raised mainly for milk production. The system of production of pigs is dominated by the semi-extensive under the traditional smallholder practice in the rural areas. The system is based mainly on the indigenous pig (70 per cent of the national pig population) which is found mainly in humid and coastal countries.

Table 2: Prevailing livestock farming in ECOWAS region

Characteristics of Prod. Systems	Pastoralism (nomadic & transhumant)	Agro-pastoralism/ Mixed farming	Peri-Urban systems & Intensive Dairy Farming
Farm priority	Milk prod. /livestock Number	Subsistence, meat & milk production /drought, soil fertility,	Sale of milk
Farmer's attitude	Risk aversion	Risk aversion, risk management , integration	Income generation
Species	Camel, sheep, goat, cattle	Cattle, sheep, goat	Cattle
Feed Resources	Communal grazing	Communal grazing, crop residue, cultivated fodder	Cultivated fodder, purchased concentrate
Farmer's mobility	Mobile	Sedentary	Sedentary, Absent
Type of enterprise	Extended family	Small holder, extended family	Small holder, communal farm parastatals, commercial farm
Surplus milk	Seasonal/rainy season	Seasonal/rainy season	Continuous
Input use	Vet. Services (vaccination)	Vet. Services (vaccination) feeds, minerals, extension services, credits	Concentrates, breeding services, credits, extension services, training, vet. Services Purchased roughage
Main constraints	Land, animal nutrition., animal health, low milk production	Land, animal nutrition, animal health, low milk production Infrastructure, marketing, knowledge of crop/ livestock. Integration	Anim. Nutrition, genetic potentials, breeding, infrastructure marketing. Extension training
Potential for commercialization	No/ very limited	No/limited	Yes

Source: Modified Nigeria report (2013)

2.3 Average farm size

Farm sizes vary from one country to another and by regions within countries. In the humid zone countries (Benin, Togo, Ghana, Cote d'Ivoire), cattle is raised mainly in the north where herd size can reach up to 100 heads. In the southern parts of these countries, average cattle herd size could be as low as or slightly higher for small ruminants. In the Sahelian pastoral zone herd sizes for cattle, small ruminants and camels are higher and vary from 50 to 300 heads or more (Table 3). For example in Niger, 20 per cent of households have cattle, and the proportion is slightly higher in rural areas at 23.5 per cent. In contrast, only 6.9 to 13 per cent of urban and peri-urban households raise livestock. The average herd in Niger is about 120 (75-142) and 92 (63-157) heads respectively for nomadic and transhumant households. In Sierra Leone, less than 5% of the population own cattle. However, 75 per cent of 450-500 000 agriculture households/ farm families raise at least a sheep and /or a goat.

Table 3: Livestock farm size in ECOWAS Members States (average number per household)

Countries	Cattle	Sheep	Goat	Camel	Pig
Benin	6	4	5	0	3
Burkina Faso ¹	12	10	10	3	4
Cabo Verde	2	3	6	0	3
Côte d'Ivoire ²	7	10	10	0	dna
Gambia	1 to 100	1 to 30	1 to 31	0	1 to 120
Ghana	7	10	10	0	8
Guinea	14	7	7	0	5 to 10
Guinea Bissau	35	30	30	0	8
Mali	52	56	77	30	dna
Niger	8	9	10	11	dna
Nigeria	5 to 10	10 to 20	10 to 20	dna	1 to 10
Senegal	37	52	30	dna	30
Sierra Leone	1 to 188	7	7	0	3
Togo	20 to 100 ³	7	5	0	3

Source: Field data compiled by the consultant from national consultants' reports

2.4 Population and proportion of population engaged in the livestock sector in ECOWAS Member States

In 2011, the ECOWAS population was estimated at 312 237 354 inhabitants (National reports, 2013). This population is relatively young because 42.3 per cent is under the age of 15 years. Approximately 65.5 per cent of the population lives in rural areas where agriculture is the main economic activity followed by livestock (Table 4).

¹ In Burkina Faso, the size is for agriculture household because at national level, the size varies from 1 animal to many hundred heads of animals (pastor household)

² In Cote d'Ivoire the size of the household herd is 5 to 10 heads of cattle in sedentary areas, however, cattle herd size can reach about 100 to 150 heads or more for transhumant households. The modern farms could have 50-400 heads of small ruminants

³ Farm size of cattle versus size of herd in the northern savannah region of Togo

Table 4: Population and proportion of population engaged in the livestock sector in 2011

Countries	Population (inhabitants)	Proportion (per cent) of		
		Youths (>15 years old)	Rural population	Livestock owners
Benin	9 321 455	44.4	54.0	60.0
Burkina Faso	16 249 000	45.7	73.0	80.0
Cabo Verde ⁴	511 365	31.9	38.2	40.0
Côte d'Ivoire	22 657 504	39.3	57.5	6.0
Gambia	1 794 026	39.6	77.4	11.2
Ghana	24 968 000	38.4	49.0	74.0
Guinea	11 200 000	45.0	69.3	30.0
Guinea Bissau ⁵	1 590 850	40.2	75.0	71.7
Liberia	3 887 886	dna	dna	dna
Mali	15 248 344	47.8	88.0	75.0
Niger	15 988 059	50.0	80.0	87.0
Nigeria	163 145 000	43.9	60.0	10.0
Senegal	12 904 922	43.0	57.0	27.1
Sierra Leone	6 313 443	41.9	77.2	85.0
Togo	6 457 500	40.8	61.0	51.4
ECOWAS	312 237 354	42.3	65.5	50.6

Source: data compiled from the national reports, 2013

2.5 Recent GDP trends in various countries

Over the last three years (2010, 2011 and 2012) and according to the reviewed national reports, average regional Gross Domestic Product (GDP) was about \$ 649.2 billion US dollars and contributions from the livestock sector to this value was about 6.2 per cent (Table 5). The highest livestock contribution to the national GDP was recorded in Burkina Faso with 19.5 per cent (Rouamba, 2013), while the lowest contribution of 1.7% in 2011 were in Ghana and Cabo Verde (Oppong-Anane, 2013; Bary, 2013).

In spite of the many challenges facing the livestock sub-sector, its contributions to the agricultural sector and national growth appear to be increasing on a yearly basis, compared to other primary, secondary and tertiary sectors. For example in Ghana the sub-sector grew at 5.1 per cent in 2011, falling slightly to 5.0 per cent in 2012 (Oppong-Anane, 2013), while it was estimated that the sub-sector contribution would grow from 3.9 to 5.4% from 2011 to 2014 (Mane, 2013)

⁴Cabo Verde: 40 percent of agricultural population

⁵ Guinea Bissau livestock production is practiced by 95.6 percent of agricultural households (71.7 percent of the population)

Table 5: Contribution of livestock to national GDP in 2011

Countries	National GDP (millions \$US)	Contribution to GDP (per cent)		
		Contribution of Agric to national GDP	Contribution of livestock to national GDP	Contribution of livestock to national GDP
Benin	2 430.3	32.4	15.6	5.8
Burkina Faso	10 189.4	34.1	19.2	19.5
Cabo Verde	1 664.0	7.0	dna	1.7
Côte d'Ivoire	24 507.5	34.0	4.5	2.0
Gambia	653.1	23.2	40.6	9.4
Ghana	24 002.0	22.7	8.7	1.7
Guinea	4 522.8	18.8	26.2	4.9
Guinea Bissau	837.1	46.0	7.8	3.5
Liberia	1 551.3	dna	dna	dna
Mali	9 041.2	34.3	dna	8.2
Niger	6 347.8	46.8	24.0	11.0
Nigeria	542 263	40.0	6.4	2.6
Senegal	14 144.3	6.1	28.0	4.3
Sierra Leone	3 261.0	47.2	5.7	2.4
Togo	3 755.0	40.6	16.6	6.7
ECOWAS	649 169.8	30.9	16.9	6.2

2.6 Contribution of each of the livestock/meat and milk value chains to the national GDP and its trend

Table 5 shows the contributions of livestock to agriculture and national GDP. An accurate estimate of the contributions of the various value chains to national GDP could not be made because of a lack of adequate and reliable data. Nevertheless, and according to Djirillo (2013), livestock products made up 62 per cent of all agricultural exports in Niger in 2011, and contributed 21 per cent of revenue from export products. In Burkina Faso, livestock exportation contributed about 14.2 per cent (4.9 per cent for meat) of the revenue realized from products exportation (Rouamba, 2013).

In Mali for the same year, livestock/meat and dairy products exports contributed 50 and 21 per cent respectively of the total value of revenue from exported products (Dembélé, 2013).

The contribution of livestock to GDP was estimated at 4.4 and 4.6 for 2012 and 2013 respectively, while growth rate for the same period were 2.2, 2.3 per cent and 0.9 per cent for livestock, meat and dairy products respectively. The contribution of milk was estimated at 35.1 per cent of the 6.5 per cent (Touray 2013). In Nigeria, the dairy value chain generated \$1.4 billion US Dollars in 2011, representing a compound annual growth rate of 7.2 between 2007 and 2011. In Senegal livestock contributed 32.8 per cent of agricultural GDP and 37.8 per cent of income

2.7 Contribution to household income, wellbeing and employment.

Agriculture and livestock production are the main providers of employment, and mobilize about 75 per cent of the workforce. Table 4 presents population and the proportions of the population involved in the livestock sector. In countries like Niger, Mali, Burkina Faso and Guinea, 10 to 30 per cent of households derive their livelihood and employment exclusively from livestock. In Nigeria there are 6,326,900 people or 4 per cent of the population engaged in the livestock / meat value chains against 10 per cent for livestock / meat and poultry value chains.

Livestock sector contributions to household income, wellbeing and employment vary from one country to another, and according to agro ecological zones, ethnic groups and production systems. As already presented in Table 4 above about 50.6% of the population in the region is engaged in livestock production. In Sahelian countries, livestock is the main economic activity which provides resources to satisfy household needs (food and cash) to the pastoral groups (Peulh, Touareg, Arab, Toubou). For rural and peri urban populations, livestock brings many benefits to families including employment, savings, food and financial security for the satisfaction of household's needs (ceremony, clothing, transport), socio-economic status and improved conditions and quality of life.

The sector contributes to state and community budgets through various taxes (market levies, synthetic tax, licenses and various health documents). Livestock contribute to stabilize the socio-economic capability of households by providing reliable income in times when prices of cereals are low due to bumper harvest. In Sahelian countries like Niger, livestock contributes to more than 15 per cent to household budgets and 25 per cent of food needs (Djibrillou, 2013) while in The Gambia only 6.5 per cent of the house hold income are generated by the livestock sector (Touray 2013).

3. DESCRIPTION AND MAPPING OF THE LIVESTOCK /MEAT AND MILK VALUE CHAINS

The chain approach describes all the activities of all operators involved in the production, processing and marketing of livestock and its products. The livestock value chains can be defined as the full range of activities required to bring a product (e.g. live animals, meat, milk, leather) to final consumers passing through the different phases of production, processing and delivery. A key objective is to ensure that poor rural people have better access to the skills and organization to take advantage of transparent and competitive markets. Within this framework, expanding the capacity for livestock production and its marketing outlets is a potent catalyst for rural poverty reduction (Ilu, Frank and Annate 2013).

3.1 Structure of the livestock/meat and dairy value chain

3.1.1 The structure of the livestock/meat value chains

3.1.1.1 Livestock/meat value chains components

The livestock / meat value chain is structured around two circuits in West Africa: the live animal circuit for cattle, sheep, goats, camels and pigs; and the meat circuit. The livestock value chain has five (5) components: inputs supply, production, marketing, processing and consumption.

Component	Description
Inputs Supply	Purchase of live animals, feed, water, drugs, vaccines, and material Services providers: public and private veterinary services
Production	On farms and in pastoral areas, owners and herders feed and manage their animals for meat, milk, animal power and manure production.
Marketing	Selling & Buying at farm gates, and/or at different types of markets: (collection consolidation, terminal and consumption markets) Transporting Distribution to consumers
Processing	Slaughter, primary carcass dressing, offal and skin treatment, Chilling, and secondary carcass dressing (butchers cuts) Processing of red meat/steak to dry meat (<i>Kilichi</i> , Dehydrated Meat of Niger) Packaging of pieces of fresh and dried meat Grilling, Preparation in restaurants and households of the fresh meat, tripe, heads and feet, leather, Packaging of prepared meat
Consumption	Auto consumption at household level Supply to domestic markets Supply to foreign markets

Relationship between components are not clearly formalized as there are no formal contracts between actors or components of livestock/meat value although there are important physical and monetary flows along the chain. Nevertheless, formal relationships could be established when necessary at farm and market levels, with inputs suppliers and service provider as well as at slaughterhouse for the whole sale and retail butchers. Besides, there are some relationships between meat importers and exporters but, this type

of relationships are not established for livestock importers and exporters due to a lack of confidence between actors and the banks for formal funds transfers within the ECOWAS region.

3.1.1.2 Livestock/meat value chains actors

There are 22 categories of actors; the five main categories of actors are:

- Livestock producers in extensive, semi intensive and intensive systems;
- Traders : they are collectors, middlemen for intermediary trade or marketing, traders/exporters, traders/importers, wholesalers for storage and sale of meat, retailers of meat, meat and by-products, butchers for slaughtering and carcass dressing;
- Processors : artisanal and modern processors for value addition to meat;
- Supply and service providers: animal feed producers, animal feed processors and dealers, animal seed providers, veterinary drugs – vaccines and material, public and private service providers (policy makers, transporters, and technicians.)
- Consumers: household's members, hotels, restaurants, universities campuses, army barracks, etc.

Poor organization of value chain stakeholders in the region makes it difficult to accurately estimate the number of stakeholders in the various value chain components. Table 6 presents the number of stakeholders in some of the countries. In 2011, Mali recorded about 275 and 24 professional organizations for the meat value milk value chains respectively. In Niger camels owners numbered about 147 069 persons and up to 3300 herdsmen / transporters involved in the live animal transport across markets.

Table 6: Number of value chain actors by chain components

Countries	Livestock/meat and milk primary production actors				Butchers & grillers	Traders	Middlemen	Milk processors	Supply & Services providers
	Cattle	Sheep	Goats	Pig					
Benin	238 000	180 000	130 000	120 000	867	dna	dna	dna	30
Burkina Faso	846 178	1 038 884	15 67 417	444 777	dna	dna	dna	dna	dna
Cabo Verde	dna	dna	dna	dna	dna	dna	dna	dna	dna
Côte d'Ivoire	690 927	dna	dna	dna	3000	2 250		40 000	4700
Gambia	30 987	29 997	50 925	753	264	302	NA	4	2
Ghana	55 822	1 111 714	1 162 053	258 317	2300	2200	850	500	2500
Guinea	267 360	dna	dna	dna	1106	483	NA	NA	NA
Guinea Bissau	14832	dna	dna	dna	dna	dna	dna	dna	2
Mali	dna	dna	dna	dna	1423	1820	220	256	dna
Niger	1 027 077	1 024 195	1 167 941	dna	33 612	24 000	11 780	dna	dna
Nigeria	2 712 753	9 042 307	3 861 731	246 776	387 700	739 600	dna	12	59 100
Senegal*	3 500 000	dna	dna	dna	dna	dna	dna	dna	dna
Sierra Leone	800	450 000	500 000	50	150	550	150	0	200
Togo	dna	dna	dna	dna	dna	dna	dna	dna	dna
ECOWAS**	9 384 736	12 877 097	8 440 067	1 070 673	430 422	747 205	13 000	40 772	66 534

NB: dna = data not available;

*In Senegal all primary production actors are aggregated into 3 500 000 persons;

**the numbers in the Table are estimates because data are not available in several countries.

Source: Field data compiled by the consultant from national consultants reports (2013)

The livestock value chain actors are:

i) Production cycle stakeholders

Direct producers (owners or herders) are: transhumant and nomadic pastoralists, sedentary farmers (civil servants, merchants) who raise animals. These stakeholders are traditional and small holder commercial farmers. The traditional owners manage and feed their animals on natural pastures while the modern sedentary farmers manage animals on farms where animals receive feed and mineral supplements. Some of them are casual because they fatten animals only once a year to sell during Tabaski and/or Christmas. The producers decide at some time to sell a part of the herd to meet the needs of households. The other actors in production cycle are those supplying feed, water, drugs, material and providing services. Livestock feed traders, local public service providers, technical and finance partners through projects and NGOs activities are the indirect actors for animal production.

ii) Marketing stakeholders

The informal nature of relations between stakeholders is the fundamental characteristic of livestock/meat marketing. All transactions are based on trust between people who know each other over a long period of time (Vame, 2013). Except in farm transaction, the marketing transaction are done in three main type of market: (i) collection markets in the area of production, (ii) re-grouping markets that bring together large numbers and distribute livestock and are located in large villages or medium sized towns and (iii) terminal markets situated in large cities and/or at borders between countries. In these markets, various actors intervene as buyers and sellers, mediators, collectors. Their activity in livestock or meat marketing can be continuous or occasional.

Livestock marketing stakeholders include

Trader collectors. Buy animals at the farms or at local markets and sell them at the regrouping markets. They also collect for export traders.

Middle-men. (Dillali (Hausa), Teffa (Dioula/Bambara) Play the role of facilitator between animal owners or sellers and purchasers at market levels. These brokers or dealers are very active operators that facilitate commercial transactions between buyers and sellers and serve also to provide food, carryout some administrative activities and the provision of accommodation for the animals.

Trader exporters. Buy animals at large markets directly from owners or indirectly through mediators or collectors. Animals purchased are exported on hoof, by road (trucks) and trains

Trader importers. Negotiate and buy animals through mediators or directly from livestock owners at the collection and regrouping markets. Animals acquired by these merchants are transferred to the national terminal markets.

Casual/ seasonal traders. They are only active during the period of Aid El Ada (Tabaski) and Christmas.

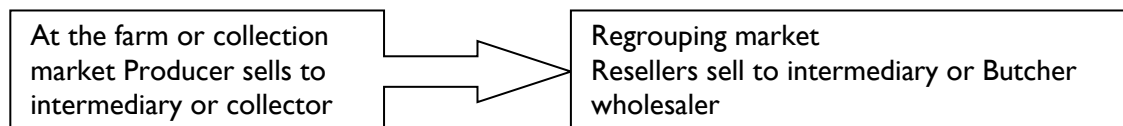
Other/secondary actors. Herdsmen driving livestock on hoof who play a key role in collection and regrouping markets; transporters who transport animals by truck and perform a variety all formalities (police, customs, animal health inspections during the whole trip; loaders of animals on and off trucks at various points along the chain, fodder suppliers, markers of animals before slaughter, animal tenders / conveyors (Madougou in Hausa).

Within countries the flow of live animals can follow three channels:

Simple channel: A direct channel with a single stakeholder group at the collection market in a rural area setting. e.g., producers and butchers

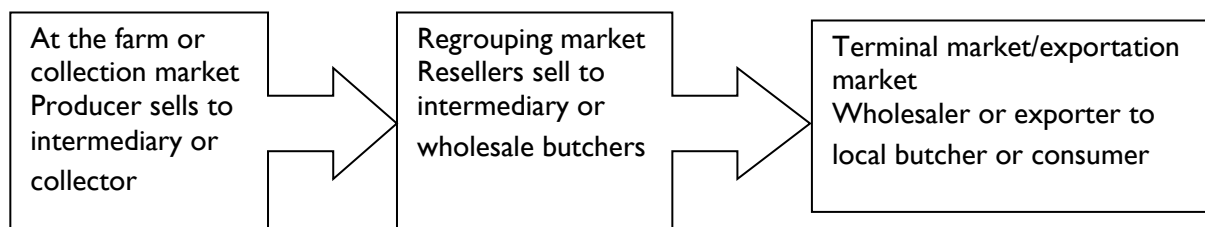


Channel with two levels: Involves a double market transaction



In this model, the animals move to terminal markets. The second level arises with the involvement of the grouping markets

Channel or circuit with three levels



Livestock marketing in the region occurs through 3 main corridors: (i) the western corridor where animals leave Mali and Mauritania to supply livestock markets of Senegal, Guinea, Guinea Bissau, Gambia, Liberia and Sierra Leone, (ii) the central corridor where animals leave Mali, Niger (via Burkina Faso) Burkina Faso to supply the Ivory Coast, Ghana, Togo and Benin markets and (iii) the Eastern Corridor or the Nigerian Corridor where animals leave Niger and Burkina Faso to supply Nigeria, Benin and Togo markets. This corridor also receives animals from Chad and Northern Cameroon for the Nigerian markets. In addition to these three corridors, a fourth one the Algerian corridor supplies camels and small ruminants from Niger and Mali to Algeria. The existence of many unofficial barriers makes the livestock marketing through ECOWAS region difficult in spite of the existence of free movement of goods treaties.

iii) Input Suppliers and Services providers

Animal feed manufacturers (agro - industrial by-products) or sellers, public (research systems, projects/programmes,) and private services that provide transportation, and advice, and sell various drugs, vaccines, animal semen and veterinary material. In addition, the development partners involved in supporting the development of the livestock sector through support for producers, research, financing of micro - projects, supporting the associative organizations, etc. are also actors in all component of livestock /meat and value chain.

The meat value chain actors are

Meat producers. These are they are farmers and butchers. The butchers buy animals at farm gates or markets. The animals are slaughtered in abattoirs and slaughter areas, and the meat and offal are sold whole-sale, semi-wholesale to retail butchers, apprentice butchers, butchers grillers / roasters, etc.

Marketers. In addition to traditional butchers importers of frozen or chilled meat play an important role in meat commercialization in coastal countries where thousands of tonnes of meat are imported every year. They purchase frozen meat from Europe, America and Asia, and resell boneless meat and liver to retail butchers or owners of refrigerated warehouses. The marketing of meat between countries in the region is not developed due to the existence of a number of Trans-boundary Animal Diseases, a lack of Sanitary and Phyto-Sanitary (SPS) norms for livestock slaughter and a lack of meat transportation facilities. Meat transporters use a variety of means to move the commodity around including: Transporting carcasses or pieces of meat in refrigerated trucks, taxis, carts, wheelbarrows, bicycles, motorbikes, thanks to a patent lack of regulations on livestock and meat transportation in the region. Other livestock products such as cooked and dried meat, hides & skins, horns and hoofs of cattle, sheep, goats, camels and pigs, are also marketed but mainly in the Nigeria corridor.

Processors. These comprise various categories of butchers (butchers who slaughter animals, the retailing butchers and super markets, butchers grillers, processors of dry meat (Kilichi, dehydrated meat of Niger and tripe. Slaughterhouse and public service staff supervise quality improvement of the products.

Input Suppliers and Services providers. Livestock producers and sellers, public and private service producers providing transportation, meat inspection and processing. In addition, development partners involved in supporting research, financing of micro –projects, and development of associative organizations. Packaging processing and storage material producers are considered indirect meat value chain stakeholders.

Consumers. Farmers who consume a part of their products for subsistence are the first level consumers, followed by others who purchase such products.

3.1.2 Structure of the dairy value chain

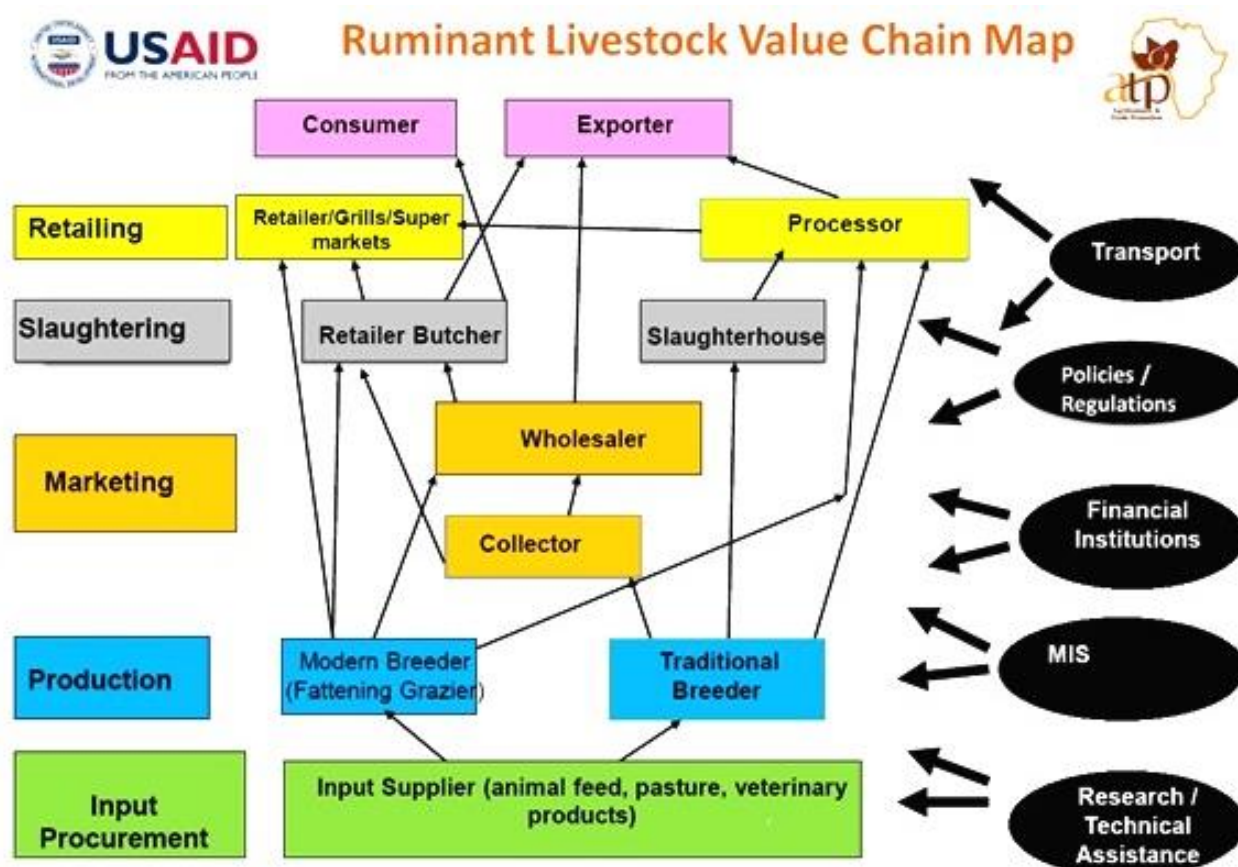
3.1.2.1 Dairy value chain components

The main components are similar to those of the livestock and meat value chain. The main difference is that the milk value chain is short and confined within national boundaries, while the livestock-meat value chain is longer and often crosses national boundaries. The components are:

- Inputs supply and Service provision. Inputs include live animals, feeds and water, drugs, vaccines and other material. The services providers are mainly public and private veterinary services
- Production. Most of the milk produced comes from farmers who raise cattle, goats, camels and to a lesser extent sheep under the traditional extensive systems. Semi-intensive dairying is another source of milk, and is confined to peri-urban areas in the Sahelian zones where the system is based mainly on local breeds such as Zebu Azawak (Niger, Mali, Burkina Faso), Gudali (Niger, Nigeria), zebu Maure (Mali, Senegal), zebu Bounadji (Niger, Nigeria). In the coastal more humid zones, cross-breeds between the locals and exotic breeds (Taurins N'Dama and Baoule crossing with European taurine), are used to improve genetic potential of the local breeds in term of milk and/or meat production. Few farms also raise pure exotic breeds like Holstein, Jersey and Guzarat. In the rural areas, the milk producers are usually men, while the milk produced is usually processed by women. Milk production level is usually low, and barely suffices to meet local domestic demands for milk and its products.
- Marketing. Milk is marketed directly by peri urban system producers, while livestock owners and herders' wives market the milk in the traditional extensive system in villages and pastoral zones. Producers often consume a part of the milk and the rest is either sold fresh or processed before being sold by women at the farm / kraal or village, town or rural roadside. In the production areas, fresh milk is sold directly to wholesalers and dairy cooperatives (which facilitate the collection of milk from their mem-

bers at their collection centres zone) and collectors of modern and artisanal dairy. Producers (especially women), wholesalers (including collectors) and dairies retail fresh or processed milk to consumers at hotels, supermarkets, petrol station, village and urban households. The retail sale of milk and dairy products is generally at kiosks, markets and ambulatory by the wives of shepherds or livestock owners who also play an important role in the collection and delivery of milk. Milk and dairy products are re-tailed for cash or credit in various forms, volumes or quantities as desired by the consumer. However, local production is limited and rarely satisfies consumer demands for milk and dairy products. Moreover, the majority of the transaction takes place without the utilization of cold chain. To meet the demand of households in the country, private wholesalers import milk and milk products that they sell in wholesale, semi wholesale and retail.

Figure 1: Map of the ruminant livestock value chain



- **Processing.** Milk is processed into various products like, yoghurt, ice cream, baby foods, chocolate milk, pasteurized milk, sweetened curd cheese, cheese and butter by modern processing. Less than 10 per cent of the milk produced locally is used in this modern process, the remaining 90 per cent comes re-constituted milk powder imported mostly from the European Union countries. In a number of countries (Burkina Faso, Mali, Niger, Senegal, Cote d'Ivoire, Nigeria and Togo), milk is transformed into various products by Dairy Processing Units.

Traditional milk processing is an activity dominated by women or wives of herders who transform milk into curdled milk, butter cheese known as *Wagashi* (Togo, Benin, Ghana) and dry cheese or "*Tchoukou*" (Niger). Processors may also receive their supplies from specialized dairy farmers using exotic breeds and peri urban farms that use local breeds of cattle, (zebus Azawak, Gudali, Maure, taurine Kouri, their

crosses and camels. Curdled milk is used in *Fura preparation* (traditional meal for Hausa people). The *Fura* sellers buy milk from the kraal, assembly markets or from the sedentary retail and wholesalers. The milk is combined with balls of cooked cereal, to make *Fura* which is consumed as a snack or meal.

- Consumption. Milk and milk products are consumed at rural and urban areas. The demand for milk and milk products is higher than the offer, and the deficit is reduced through the importation of various milk products from Europe, Latin America and Asia by private entrepreneurs.

3.1.2.2 Dairy value chain actors

- Milk production Stakeholders. Stakeholders are women and men who could be farmers (usually men), and breeders directly involved in production. Farmers (men and women) manage their herds, purchase veterinary inputs and feed supplements (cotton seed, cotton and groundnut cake, cereals bran, cereals forage, cowpea and groundnut hay, agro industrial by products.), watering and minerals (salt) supplementation. The women farmers are mainly involved in herding lactating females. In rural households, women are particularly concerned with animal health care and mineral supplementation of lactating cows and milking. They deal further with the distribution of milk between family needs and marketing the surplus. In the recent years, peri urban farms have been set up around capitals and other big cities. These small scale dairy farmers use local breeds (Azawak, Gudali, Maure) and exotic breeds (Holstein, Jersey, Monbeliard, Guzerat.) and their crosses. To improve milk production, farmers with the required means import and use animal semen via Artificial Insemination and improve animal feeding technique, crop forage cropping, etc. There are a number of research institutions engaged in livestock genetic improvement in order to improve milk and meat production many Member States,
- Marketing Stakeholders. the main actors in marketing of milk and milk products are: (i) dairy groups, (ii) women dairy traders (sellers or intermediaries), (iii) city based sedentary retailers who engage with women milk wholesalers, (iv) dairy industry entrepreneurs including women engaged in milk processing using fresh and reconstituted imported milk powder to provide dairy products for urban and peri urban customers. Other milk value chain stakeholders include:
 - Private wholesalers who buy milk in bulk from producers and/or rural collectors and sell to retailers.
 - Milk Cooperatives which facilitate milk collection and marketing around milk collection centers.
 - Hawkers/vendors who collect milk from producers and/or milk collectors and sell directly to consumers and other market agents. They may also be the wives of breeders/producers
 - Retailers who operate as supermarkets, smallholder retailers in market places and mobile vending facilities. They usually respond to market demands in terms of packaging in convenient quantities and forms and availability in convenient locations.
- Processing Stakeholders. These are usually women who process fresh milk into dairy by- products. There are several Milk Processing Units in the region (Table 7), and they can be grouped according to their capacity and type of technology used as: artisanal units, mini – dairies, semi-industrial units, and industrial units. The latter often have the capacity to process more than a 1 000 litres of milk daily. Examples include: Laiterie de Fada in Burkina Faso; SOLANI, LABAN, and Niger Lait in Niger; and MaliLait in Mali.

Table 7: Milk Processing Units in ECOWAS region in 2013

Countries	Number	Name of main Milk Processing Unit
Benin	5	IPOLAIT, IBB, SOTRACOM, Société Commerciale de Lait de Gogounou (SOCO-LAIG), Mini Laiterie de Nikki
Burkina Faso	5	Laitière de Cissin ; Kossam Badhio ; Laiterie Fada ; Faso Kossam ; Kossam yadega
Cabo Verde	0	
Côte d'Ivoire	15	IVOLAIT, NORMANDIA, DEGUE DELICES, PANA, MIKANA (PABCI), IVOIRE DEGUE, SAPROLAIT, SAPLED, EUROLAIT, SDTM-CI, OLAM IVOIRE, PROSUMA, Nouvelle GEDISPA, SABIMEX, NOVALIM NESTLE, etc.
Gambia	0	
Ghana	34	Nestles Ghana Ltd, Fan Milk, Promisidor , West Africa Distribution Ltd., Ramani Distribution Comp Ltd, PZ Cussons Ghana Limited, Primex Ghana Limited, Cadbury Ghana Ltd, Kwatsons Ghana Ltd, Unique Star Foods Ltd, etc.
Guinea	5	Mini-Laiterie de Koumbia, de Marella, de Beyla de pita, de Dinguiraye
Guinea Bissau	1	Leite Blufo stopped working since 1993
Mali	100	Mali Lait
Niger	30	SOLANI, Niger – Lait, Laban, Laitière du Sahel, Biolait, KAANI, Annour, Tarmamum Ader, Nagari, ...
Nigeria	9	Peak, Cowbell, Oldenburger, Nestle, Regiliat, Real, Marvel, Luna, Fan Milk
Senegal	46	Saloum Agro-alimentaire, Laiterie du Berger, SAA/ Sénégal Agro-alimentaire, Kosam Paate Waare.
Sierra Leone	0	
Togo	1	FANMILK
ECOWAS		250 Milk Processing Units

Source: Data compiled by the consultant from nationals' consultants reports' (2013)

- **Consumers.** About 10 to 30 per cent of livestock owners and herders in transhumant and nomadic system fresh milk as a base for their traditional food. In sedentary rural area of Sahel, traditional milk based meals such as *Lah*, *Fura*, *Degue*, *Tchiakri* are prepared and consumed with milk on a daily basis. Milk and milk products are consumed across West Africa, but per capita consumption is rather low, and varies according to household incomes

Relationship between actors. A solid relationship exists between : (i) producers and/or cooperatives and milk collection centres; (ii) milk collectors and some milk processing units; (iii) milk processing units and retail sellers of milk products ; (iv) importers and exporters of milk and milk products and (v) retail sellers and consumers. The relationship between inputs suppliers and services providers are the same as for the livestock/meat value chain.

3.2 Physical flows of meat and milk among the different components

The flows are transfers of goods, services or funds that are realized between the different stakeholders. They are the result of economic exchanges between the stakeholders. Each stakeholder group is concerned with two types of flows: physical "incoming" flows and "outgoing" counterparty cash flows. Physical flows can be external to stakeholders or of internal origin.

3.2.1 Physical flows of Livestock and meat in 2011

Livestock physical flows. The physical flows of cattle, sheep, goats, camels and pigs start with the production of livestock and pigs by various producers under traditional, semi intensive and intensive systems of production. The Sahelian countries (Burkina Faso, Mali and Niger) produce a sufficient number of live animals to cover their domestic demands for slaughtering and breeding (see annex Tables 1, 2, 3, 4 and 5). The off-take serves various purposes: commercial slaughter (butchers), social slaughter (ritual, ceremonies) breeding and exportation (traders). Table 8 presents the physical flow of livestock in region in 2011.

Table 8: Flows of livestock in ECOWAS region in 2011

Animal species	Total population	Off-take		Slaughtering of off-take population		Import/Export	
		Number	Rate	Number	Rate	Export	Import
Cattle	63 128 047	6 906 498	11	6 125 442	88.7	1 242 807	684 774
Sheep	74 921 551	13 793 342	18	9 940 706	72.1	2 185 427	1 370 601
Goat	130 446 369	25 108 330	19	18 212 216	72.5	1 790 256	775 772
Camel	2 895 861	274 472	9	152 731	55.6	80 018	dna
Pig	11 225 235	5 345 207	48	3 269 810	61.2	9070	90 572

Source: Data compiled from nationals consultants' reports (2013)

There is an internal and a trans-boundary flow of livestock for each country. The internal flow is done between the major zone of production (rural) and the high consumption zone (urban). In addition to the flow of live animals, there is a flow of money between farmers, sellers and buyers of livestock. For example in Togo the value of imported live animal was estimated at \$ 9.3, 10.8 and 12.7 million US Dollars respectively in 2010, 2011 and 2012. However, except for Burkina Faso, Mali and Niger (figure 2), all other ECOWAS Member States import live animals for slaughter from neighbouring West-African countries with the flow for Senegal coming from Mauritania, and for Nigeria from Chad and Cameroon.

In general the livestock off-take is mainly for internal consumption, but it could also be for breeding by other farmers or for export to other countries in the region. For example in Niger, 35.7 per cent of the cattle off-take (395 351) was for internal restocking of farms, and 42.1 per cent for exportation. In Mali, however, only 20 per cent of slaughtered (374 585) against 510 888 sheep exported.

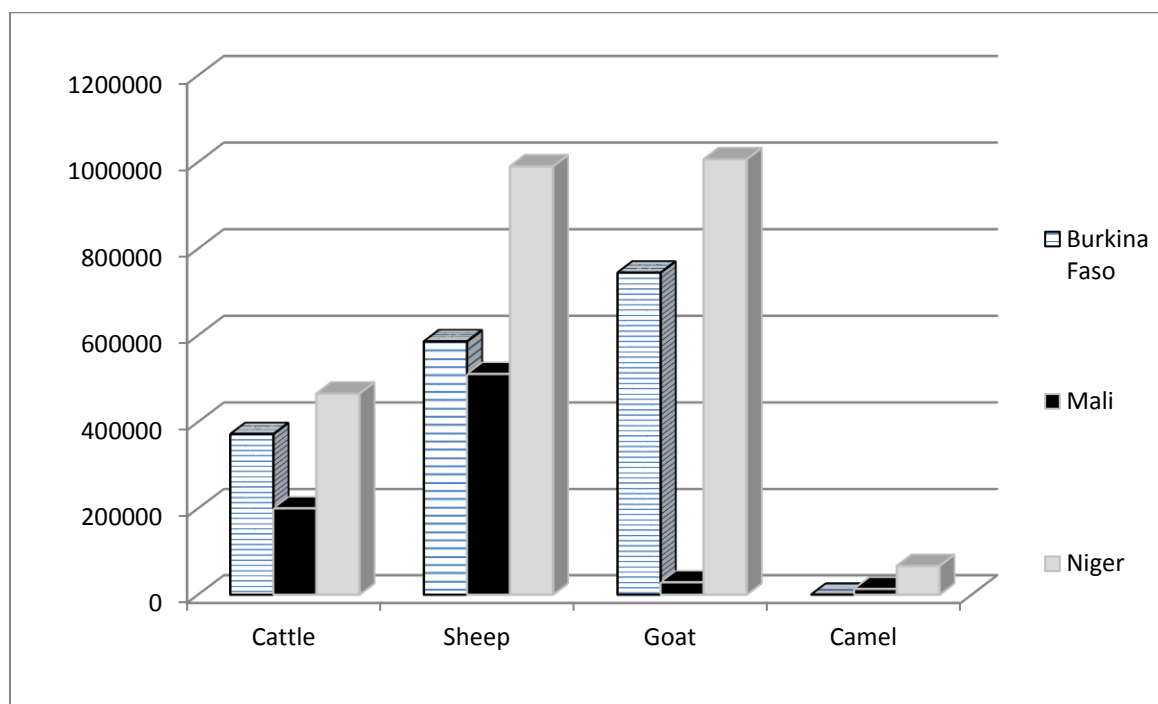
Camels are raised in five countries but exported only by Mali and Niger. Camels are exported to Algeria by Mali and to Libya, Algeria and Nigeria by Niger. Niger appears to be the first livestock exporter, and Nigeria, Cote d'Ivoire and Ghana are the biggest importers of livestock.

The physical flow of meat in several countries like Cote d'Ivoire, The Gambia, Ghana and Senegal which slaughter mainly what is imported, the number of slaughtered animals is higher than the number of the livestock off-take (see annex Tables 1,2,3,4 and 5). In order to meet domestic demands for animal protein,

many West African countries import meat from European and Latin American countries. Thousands of tonnes of carcass of beef, poultry, and pigs are imported each year.

In 2011, Burkina Faso exported 52 000 tonnes of meat equivalent to Ghana, Côte d'Ivoire, Benin, Togo and Nigeria, compared to the importation of 20 tonnes of meat equivalent in live animals. The exportation of meat was estimated at 520 tonnes for a national production evaluated at 130 500 tonnes.

Figure 2: Live animals exportation by three Sahelian countries in 2011



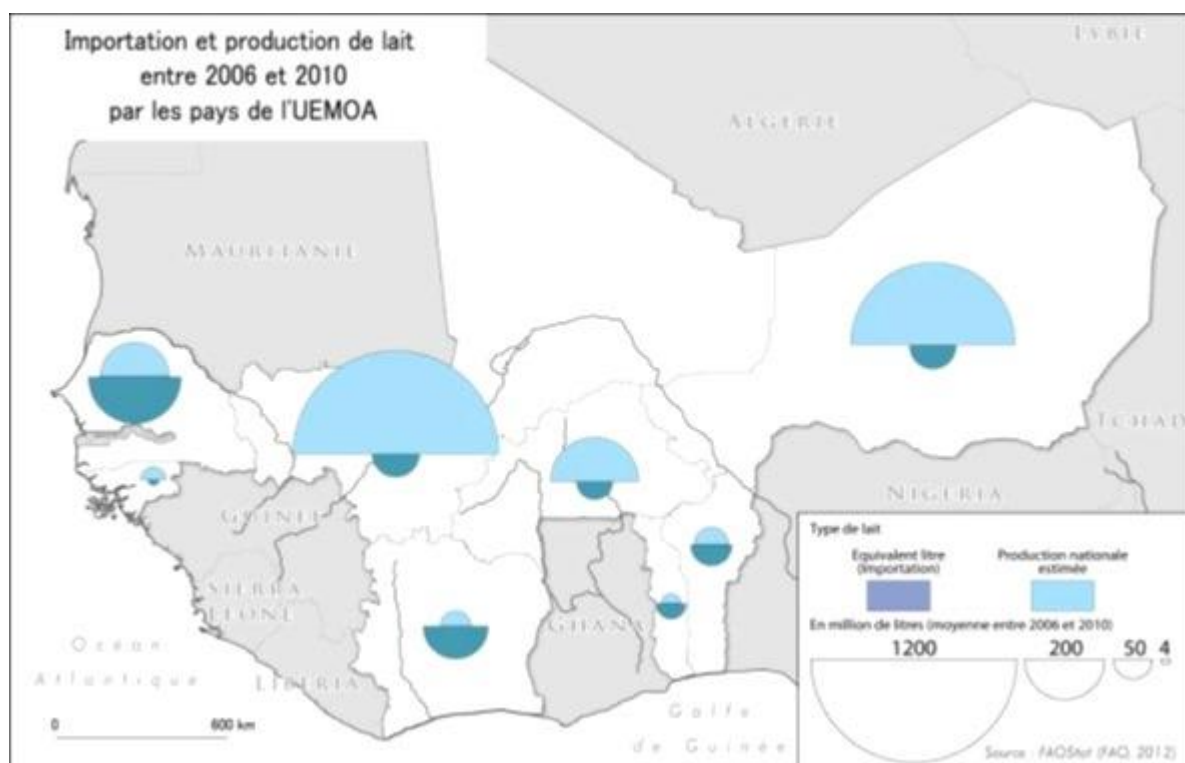
3.2.2 Physical flows of milk and milk product

Milk and milk products flow occurs through:

- The traditional circuit exclusively for the domestic production of fresh milk
- The market for distribution of milk and milk products for producers, intermediaries responsible for supplying processors, traders and consumers,
- The regulated import integrated into an overall forecast plan that takes into account general indications of foreign trade and the effects of national and international economy.

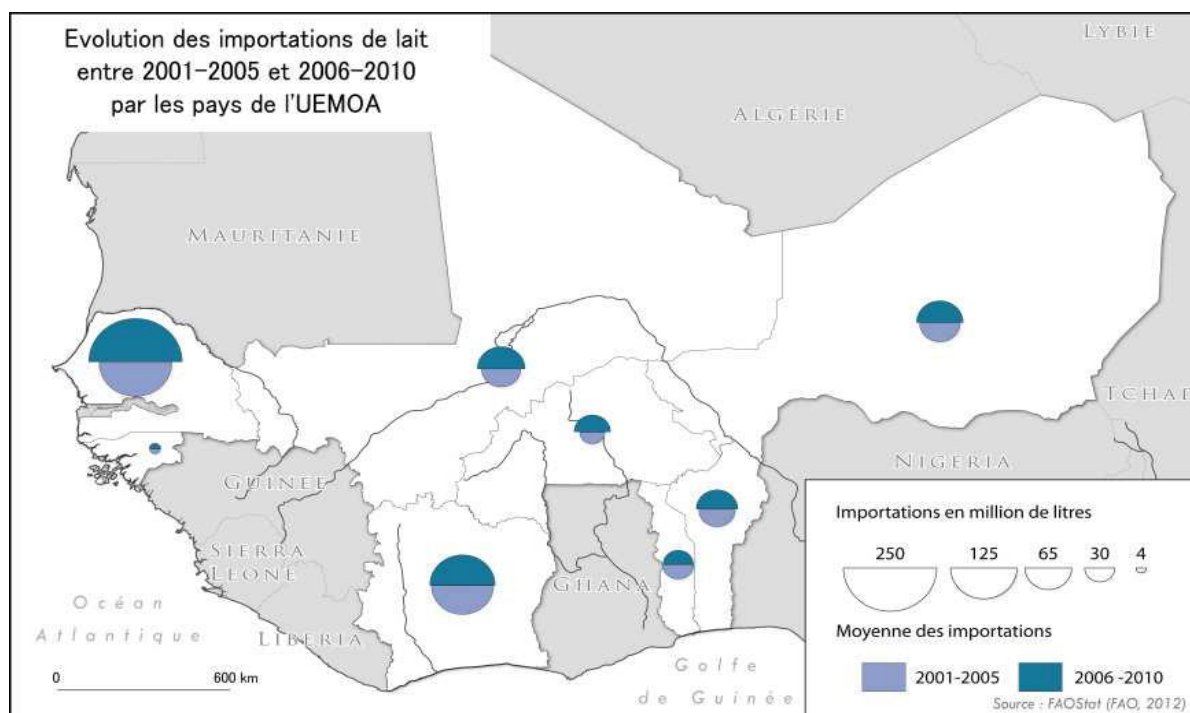
The dominant system of milk production is traditional. The national production is consumed locally by producers and in neighbouring communities. During the rainy season, the potential of milk production is high but the milk collection process is very weak, and the internal physical flow is between rural and urban areas. In spite of the high potential of milk production in Sahelian countries, the main milk flow pathway is between these countries and European, American and Asian countries. Figures 3 and 4 present milk and milk products importation in the different WAEMU Member States. For example in Guinea, between 2009 and 2012, an average of 15 773 tonnes of milk equivalent was imported each year and 177 tonnes were re-exported to Liberia and Serra Leone. In 2012, milk production potential was estimated at 155 076 tonnes of milk equivalent while that of Togo was about 13 567 tonnes.

Figure 3: Milk and milk products importation in UEMOA member states



Source: Etude relative à la formulation du programme d'actions détaillé de développement de la filière lait en zone UEMOA 2013.

Figure 4: Trend of milk and milk products importation in UEMOA Members States between 2001 - 2005 and 2006 – 2010



Source: Etude relative à la formulation du programme d'actions détaillé de développement de la filière lait en zone UEMOA 2013

3.3 Primary production process

The primary production process includes a supply of inputs such as forage, animal feed for fattening and milk production, the animals, veterinary drugs and vaccines as well as service provision and credit. This process combines all good farming practices (feeding, watering, provision of veterinary services and housing) which are used to feed and to take care of the animal to make perform the expected functions of breeding, production of meat and milk and the provision of draft power in the various prevailing farming systems in West Africa.

3.4. Yield per unit (dressed (carcass) weight and total production of meat

3.4.1 Yield per unit (dressed carcass)

Livestock carcass weights and yields (dressing percentage) vary according to species and breeds. Carcass yield for the various species are: (i) 40 to 55 per cent for cattle, (ii) 48 to 57 per cent for sheep, (iii) 48 to 60 per cent for goat. Average carcass weights are about 117, 13, 11, 44 and 170 kg respectively for cattle, sheep, goats, pigs and camels (Table 9). In general, carcass weights of Sahelian breeds are higher than those from the coastal zone.

3.4.2 Total production of meat (ruminants and pigs)

In 2011, total meat production was estimated at 3.3 million tonnes. Although the contribution of pigs is negligible in the Sahelian countries, it is important for coastal and island countries who sometimes import tonnes of carcasses to fill the deficit of the local offer. Data on meat production and carcass weights are presented in Table 9 below, although it is difficult to accurately estimate these potentials because of a lack of reliable figures from regulated and controlled slaughtering facilities. Ritual and clandestine slaughtering account for about 60 to 70 per cent of all potential slaughtering for cattle, and clandestine slaughtering is even more important for small ruminants and pigs.

In Niger, livestock population in the agro pastoral system was estimated at 66% (20.4 million) of the national stock (38 million heads), and in 2011 potential meat production for this system was estimated at 205 326 tonnes against 105 774 tonnes for pastoral system. In Senegal, the pastoral and agro pastoral systems with contributions from imported live animal from the region, accounted for 98 per cent of total meat production figure, with the remaining 2 per cent coming from semi intensive and intensive systems (Gueye 2013). In Ghana, data presented show that 35 621, 467 80 and 30 687 tonnes of (or 31.5, 41.4 and 27.1 per cent) were produced by the extensive, semi intensive and intensive production systems respectively.

In Mali, estimated meat production figures in 2011 showed that the main supply came from cattle 64 per cent, compared to 23 per cent for small ruminants, 0.57 per cent for camels, 0.32 per cent for pigs and 11.4 per cent poultry.

Pork production and consumption represents 65 per cent in Cabo Verde. In ECOWAS coastal countries like Benin, Togo, Ghana, Cote d'Ivoire, in addition to livestock meat production, pigs, poultry, rabbit, grass cutters and bush-meat contribute to the national supply of meat.

Table 9: Average carcass weight (kg) and countries meat production (tonnes) in ECOWAS in 2011

Countries	Cattle			Sheep			Goat			Pig			Camel			Total Meat Prod (tonnes)
	Carcass Weight (kg)	Meat production (tonnes)	Pro-	Carcass Weight (kg)	Meat production (tonnes)	Pro-	Weight Carcass (kg)	Meat production (tonnes)	Pro-	Weight Carcass (kg)	Meat production (tonnes)	Pro-	Weight Carcass (kg)	Meat production (tonnes)	Pro-	
Benin	138	34 986		14	2 640		12	5 248		25	4 596		0	0		47 470
Burkina Faso	113	85 502		9	15 971		8	28 985		24	4 834		192	158		13 0617
Cabo Verde	108	16 996		15	11 032		9	2 057		64	6 422		0	0		34 450
Côte d'Ivoire	108	16 996		15	11 032		9	dna			6 422		0	0		34 450
Gambia	104	47 418		14	32 098		13	76 022		55	21 192		0	0		7 535
Ghana	125	28 751		15	21 012		13	150 325		42	39 000		0	0		239 088
Guinea	94	64 979		11	6 822		12	9 623		43	1 509		0	0		170 605
Guinea Bissau	110	1459		10	69		9	49		40	dna		0	0		1 577
Mali	112	60 540		13	6 677		12	11 990		57	383		176	463		80 054
Niger	120	187 231		14	35 266		13	55 043			dna		150	33 559		311 100
Nigeria	112	375 300		13	709 600		12	775 700		55	89 200		n/a	n/a		1 949 000
Senegal	150	65 052		14	23 166		12	15 079		45	11 107		161	14		125 315
Sierra Leone	108	118 343		10	10 025		8	8 993		50	4 973		0	0		142 334
Togo	130	4 865		17	9 076		14	8 615		24	4 690		0	0		27 246
ECOWAS	117	1108418		13	894 486		11	1 147 729		44	194 328		170	34 194		3 300 841

Source: Data compiled by the consultant from national consultants reports (2013)

3.5 Milk and milk production and importation

3.5.1 Milk production per lactation

In general, the duration of lactation for local breeds is 6 to 9 months for cows and 1 to 3 months for the ewes and does for which the daily milk production is less than 0.5 litre. The milk production potential of local breeds is rather low (less than 2 litres per day) except for the taurine Kouri (Niger, Nigeria), zebu Azawak (Niger, Mali, and Burkina Faso), Gudali (Niger, Nigeria), Maure (Mali, Senegal) and Bunadji (Niger, Nigeria). Most of milk produced in the region comes from cattle raised in the extensive/traditional system. To improve milk production, live animals and semen of animal of some exotic breeds (i.e. Jersey, Holstein) are imported. Average milk production per lactation is about 180 to 200 kg for N'Dama and Baoule breed, 373 - 450 kg for zebu Mbororo, Djelli, Gobra, Borgou, 800 to 1100 kg for Kouri, Azawak, Bounadji and Gudali breeds and 3 215 kg and more for crosses and exotic breeds.

3.5.2 ECOWAS milk production in 2011

As indicated above for meat production data, reliable accurate statistical data on total milk and milk products production or production figures by type of production system are not available. However some estimates are available as in Ghana with figures for extensive, semi intensive and intensive production systems: 25 155, 11 505 and 19 500 tonnes of milk equivalent respectively in 2011.

Small ruminant milk production is negligible because the ewe and goat milking is not systematic due to the weakness of the production (in general less than 0.5 litres per day) and social context.

In contrast, camel milk production is important in Mali and Niger as shown in Tables 10 and 11 below.

A total of 5.2 million tonnes milk equivalent was produced in 2011. By considering a per capita consumption at 62 litres per year, the supply covers only 26 per cent of the demand. Sahelian countries like Nigeria, Mali, Niger and Burkina Faso are the big producers; they are followed by Senegal and Burkina Faso. In spite of the high potential of milk production in the region, all countries import milk (maps 1 & 2 above) due to the seasonality of the production, weakness of the milk collection system and low milk production by local breeds.

For example in 2011, imported milk and milk products (milk powder, concentrated and sweetened condensed milk) and dairy products (butter, cheese, yogurt, etc.) in Cote d'Ivoire were estimated at 154.7 tonnes with a value of 32.7 billion CFAF (\$65.4 million US dollars US).

Table 10: Milk production per animal (cattle and camels) and per year in 2011

Countries	Cattle		Camel		Total production (including Small ruminant)	
	Per lactation (litres)	Total national production (litres)	Per lactation (litres)	Total national Production (litres)	Litres	Tonnes
Benin	200	98 989 800	0	0	98 989 800	101 267
Burkina Faso ⁶	110	188 461 856	2500	dna	213 785 810	218 703
Cabo Verde ⁷	800	3 406 829	0	0	10 521 985	10 764
Côte d'Ivoire	200	20 360 704	0	0	20 360 704	20 829
Gambia	200	24 043 988	0	0	24 043 988	24 597
Ghana	365	54 897 361	0	0	54 897 361	56 160
Guinea	419	143 707 722	0	0	143 707 722	147 013
Guinea Bissau	419	143 707 722	0	0	143 707 722	147 013
Mali	270	596 304 180	1080	298 774 440	1 443 397 951	1 476 596
Niger	700	330 995 000	1640	15 975 240	945 920 821	967 677
Nigeria	189	170 100 000	dna	dna	1 788 856 000	1 788 856
Senegal	200	168 099 000	dna	dna	184 490 000	188 733
Sierra Leone	150	13 959 000	0	0	13 959 000	13 645
Togo	334	dna	0	0	13 878 644	14 198
ECOWAS	325	1 957 033 162	1 360	314 749 680	5 100 517 508	5 176 051

NB: 1 litre = 1.023kg

Source: Data compiled by the consultant from national consultants reports (2013)

In Senegal for example, the potential value of milk produced in 2011 was about 73.8 billion CFAF (\$151.9 million dollars US dollars) while the value of imported milk and milk products were 57.4 billion CFAF (Table 12).

Milk production is mainly for home consumption in rural areas but in peri urban zones (semi intensive and intensive systems of production) the fraction sold is about 68 per cent and the rest (32 per cent) consumed by the producers.

⁶ Cattle: 70 percent of females; 50 percent of adult females; 40 percent of females in lactation; 110 litres of milk/cow/year. Goats : 33 percent adults females ; 60 percent of females in lactation ; 60 litres of milk /goat/year

⁷ 67 percent of the production is consumed by the people

Table 11: Milk production in West African countries in 2012 in tonnes (FAOSTAT, 2014)

Country	Cow milk	Goat milk	Sheep milk	Camel milk	Total
Benin	33 000	8 925	0	0	41 925
Burkina Faso	135 107	109 595	72 670	273	317 645
Cabo Verde	12 500	12 500	0	0	25 000
Côte d'Ivoire	31 358	0	0	0	31 358
Gambia	9 450			0	9 450
Ghana	40 950	0	0	0	40 950
Guinea	116 000	12 880	3 700	0	132 580
Guinea-Bissau	17 510	4 000	2 250	0	23 760
Liberia	845	0	0	0	845
Mali	745 140	715 000	159 000	138 727	1 757 867
Niger	501 226	288 974	124 434	98 079	1 012 713
Nigeria	566 000	dna	dna	dna	566 000
Senegal	173 630	15 320	13 050	dna	202 000
Sierra Leone	29 750	0	0	0	29 750
Togo	12 825	0	0	0	12 825
ECOWAS/Grand total	2 425 291	1 167 194	375 104	237 079	4 204 668
Per cent of total	57.7	27.8	8.9	5.6	100

Table 12: Estimation of Meat and Milk production and importation (2011)

Countries	Meat				Milk			
	Production		Importation		Production		Importation	
	Quantity (tonnes)	Value (million \$US)	Quantity (tonnes)	Value (million \$US)	Quantity (tonnes)	Value (million \$US)	Quantity (tonnes)	Value (million \$US)
Benin	47 470	181.6	dna	dna	96 107.0	38.6	12 104.0	0.6
Burkina Faso	130 617	625.1	32.0	0.3	177 492.0	88.7	16 260.0	dna
Cabo Verde ⁸	34 450	dna	1 390.0	dna	10 285.0	dna	15 611.0	dna
Côte d'Ivoire	34 450	dna	55 267.0	60.0	5 090.0	dna	24 731.0	62.6
Gambia	7 535	22.1	8 937.0	1.8	24 597.0	18.6	33 210.0	7.7
Ghana	239 088	176.0	23 867.0	5.6	56 160.0	11.0	27 618.5	4.0
Guinea	170 605	779.9	54 768.0	250.4	147 013.0	315.0	17 801.0	38.2
Guinea Bis-sau	1 577	8.7	174.4	0.7	3 567.0	9.7	2 225.9	6.7
Mali	80 054	dna	dna	dna	1 410 946	dna	dna	dna
Niger	311 100	1 555.5	0.0	0.0	967 747.0	967.7	11 390.0	31.4
Nigeria	1 949 000	8 261.0	1513.0	0.5	1 788 856.0	930.0	162 417.0	1 685.0
Senegal	125 315	572. 7	6 616,24	12.9	190 025	151.9	229 690	119.6
Sierra Leone	142 334	4.3	5 000.0	1.5	13 645.0	2.1	24 500.0	7.0
Togo	27 246	dna	10 000	dna	13 567	dna	dna	dna
ECOWAS	3 300 841	11 614	160 948	334	4 715 072	2 533	347 868	1 963

Source: Field data compiled by the consultant from national consultants reports (2013)

⁸ In Cabo Verde, the cost of one imported ton of meat is about **3638 \$US** in 2011 and **3970 \$US** in 2012 against **3871 \$US** in Cote d'Ivoire.

3.6 Meat and milk losses

- **Meat losses.** The quantity of meat losses is difficult to estimate. In most of countries, un-controlled and un-regulated slaughtering amounts to about 60 to 70% of the total number of animals slaughtered annually in many countries in the region. Post-harvest losses of meat generally consist of total and partial carcass condemnation due to suspected or diagnosed diseases, putrefaction and poor body conditions. Losses caused by decay of unsold meat are due to the gaps in the cold chain (lack of refrigeration, power cuts, etc.). In rural areas, these losses are minimized by artisanal meat processing (smoking, grilling and frying).
- **Milk losses.** It is difficult to estimate at the level of production because of the household consumption and poor control and regulation of the milk processing industry. Losses are high during the rainy season owing a combination of factors: a poor milk collection system, a weak maintenance of the indispensable cold chain coverage, poor access to production sites, weakness producers' organizations, and a poorly developed dairy industry.

3.7 Meat and milk storage capacities

- **Meat storage capacity.** In several countries, abattoirs are not equipped with cold rooms and, even when available there capacities are often inadequate to accommodate the quantities of meat available to be stored. The limited available cold room facilities are often found in abattoirs located in capitals and large cities and even then storage capacities rarely exceed 1000 tonnes. These are sometimes supplemented by at private cold rooms of butchers and entrepreneurs importing meat from Europe and America.
- **Milk storage capacity.** The situation is comparable to meat storage and milk is mostly sold fresh but some milk collection centres and processing units have cold chain infrastructure. In general, a part of the produced milk is rapidly consumed at the household level and the balance is processed by Fulani women or sold in villages, and urban households or at weekly markets. Well established processing units more often than not import milk powder for storage and subsequent reconstitution when needed.

3.8 Inputs and factors for primary production

3.8.1 Types and quantity of inputs required

Types of inputs used for the production of livestock / meat and milk can be grouped into the following categories: live animals, semen of improved breeds, animal feed (forages, concentrates, mineral and water), veterinary drugs and vaccines, equipment for husbandry and housing, and various services.

i) **Animals and animal semen (types and breeds):** For the primary production of livestock, meat and milk traditional smallholder mixed farmers utilize various breeds and their crosses. The different breeds of animals used are presented below with additional details in in annex Table 6.

- Taurine breeds: N'Dama, Sanga, Lagunaire, Baoule, Kouri (around lake Chad)
- Zebu breeds: Azawak, Gudali, Mbororo, Maure, Gobra, Djelli, Bunadji, Toronke
- Taurine x Zebu: Borgou
- Exotics breeds. Friesian, Holstein, Jersey, Monbeliard, Santacruse, Guzerat and the products of their crosses (Frisian-Sanga, Ndama-Jersey)
- Sheep breeds. Djallonke, Mossi, Peulh (Bali, Oudah, Balami, Touabire), Touareg (Arara), Macina/Koundoum, Hadine Dane Zaila and their crosses
- Goat breeds. Local breeds: West African Dwarf Goat, Djallonke, Sahelian, Chèvre Rousse de Maradi, Red Sokoto. Exotic breeds Saanen, Majorera (origin Canaries Island), Anglonubiana (origin Brasilia), Crosses

- Camel breeds. Azawak, Azarghaf, Manga/Yoria, Crosses
- Pig breeds Large White, Landrace, Duroc, Khorogo, Ashanti Black, Large White and Landrace crosses, local or indigenous breeds.

ii) Animal feed. In rural areas animal feed is essentially natural pasture constituted of grasses and legume forages. Animals graze in communal areas during the day and receive supplemental feed comprising crop residues (cereal straws, groundnut and cowpea hay) agro industrial products (cereal brans, brewers' grains, molasses from sugar cane) and concentrates. In pastoral areas, forage is not sold but in urban areas, bush grass and hay are sold. The main agricultural by-products used are cereal brans (corn, rice, millet, wheat and sorghum); meals and cakes (cotton soybean, groundnut, cotton palm kernel, and coconut); residual household waste (cassava, potatoes, and yam peels). These products and their processing by-products are available in the different countries during the post-harvest period. Other inputs used to feed livestock include bones meals, oyster shells or limestone.

Animal feed processing units exist in many Member States. In Burkina Faso there are approximately 20 units of animal feed manufacturers (Rouamba 2013). The main products manufactured by these units are cotton seed cake, wheat bran and molasses, the latter is produced exclusively by a sugar company. In Cote d'Ivoire there are some large scale animal feed importers including PROVETO, SIPRA, FOANI, ALCI, MAILVAGE, CALYS, REAL, FACI, SEETAB, and SEIE.

Drinking Water is an essential ingredient for optimum productivity, especially in Sahelian countries where the availability and distributions of water points could constitute a major constraint.

iii) Veterinary drugs, material and biological products. Veterinary drugs and material are imported and distributed by the private sector. However the private sector is not well developed in many countries. The main pharmaceutical products are against parasites, infectious diseases and various vaccines and vitamins, trace minerals, anti-stress, and anti-inflammatory products and various laboratory and husbandry material.

iv). Genetic materials. These products comprise live animals and semen for artificial insemination. The channel of distribution of veterinary drugs and genetic materials is not well organized across the region, and data exists only on imported products.

v). Services. Service providers include public and private advisers, herders, inputs transporters, veterinary clinics, banks and micro finance institutions.

3.8.2 Inputs purchase prices

Throughout the region, prices of live animals intended for reproduction vary with breed, age, region and origin (local or imported). Exotic breeds are more expensive than Sahelian breeds which are in turn more expensive than costal breeds.

Animal feed is usually sold in urban areas where the price is variable according to: the season of year (rainy season and dry season); type of the feed (bush grass, bush hay, crop residue, concentrate, cotton seed, cotton cake, cereal bran); and the locality (zone of production and consumption). For example in The Gambia, the average price of groundnut hay and groundnut cake is about \$ 177, \$165 respectively. Transportation cost is additional at \$23 per metric tonne.

In Mali, the price of 50 kg of cotton cake, *Bunafama feed* and concentrate all manufactured by large feed mills are respectively \$16, \$15 and \$10 USD dollars. The price of the kilogram of forage seeds are about \$13.2 US dollars for *Pennisetum species*, *Stylosanthes hamata* and *Panicum maximum*, \$2 US dollars for cow-pea and \$1.5 US dollars for maize.

Veterinary drugs and material are more expensive in Sahelian countries (Niger, Mali and Burkina Faso) than in coastal areas (Guinea, Senegal, Nigeria, Cote d'Ivoire, Ghana, Benin, and Togo). Drug prices fluctuate according to availability. Drug importation and distribution is usually by the private sector but under the control of the public service. Nevertheless, the distributive channels for veterinary drugs and equipment is weak and leaves much to be desired.

3.8.3 Impact of season on availability and cost of the main inputs

The costs of the main inputs for the meat and milk value chain fluctuate during the year. For ruminants and in particular cattle which depend mainly on pasture in the rangelands, the cost of feeding increases during the dry season due to forage scarcity and poor quality of the available material. During this period, farmers resort to supplementing the diet of livestock with crop residues and agro-industrial by-products. Generally, quantities of feed ingredients are high and prices low during harvesting period and vice versa during the lean period. The price of the main inputs varies from across the region from one country to another, and also within countries on the basis of location (Table 13).

Table 13: Price (in \$US) of some animal feed in some countries in 2011

Countries	Bush (one load)	hay cart- load)	Maize bran (bag of 50kg)	Wheat bran (bag of 50 kg)	Copra/ nut (bag of 50 kg)	Pea- cake (bag of 50 kg)	Cotton seed cake (bag of 50 kg)	Cotton seed (bag of kg)	Livestock feed
Benin	4		9	13	dna		17	dna	11.8 & 15.6
Burkina Faso	1		14	dna	dna		3	10	18
Cote d'Ivoire	10		12	15	12		18	dna	dna
Gambia	dna		dna	dna	8		dna	dna	dna
Ghana	4		7	8	15		20	17	22
Guinea	dna		19	55	28		33	1	dna
Guinea Bissau	4		dna	dna	dna		dna	10	dna
Mali	6		dna	dna	dna		16	dna	15
Niger ⁹	1		dna	20	dna		24	12	dna
Nigeria	dna		13	8	18		24	22	dna
Senegal	10		8	8	15		15	18	21
Sierra Leone	2		3	10	dna		dna	dna	25
Togo	dna		dna	7	dna		dna	dna	dna
ECOWAS	5		11	16	16		19	13	20

Source: Field data compiled by the consultant from national consultants reports (2013)

⁹ Niger, price of 1 kg bundle of bush forage (0.3 – 1 \$US)

3.8.4 Inputs storage costs

The cost of storing feed inputs is quite low or zero in rural areas to the extent that producers store crop residues on trees or in areas closed up with fences constructed with local materials. In cities, storage bags for (wheat, corn, rice) and oil meals (cotton, peanut, copra) are provided by traders who have their own stores. If necessary, the storage of a sack of 100 kg hardly exceeds \$1 US dollar per month.

3.8.5 Transportation costs of inputs from various locations.

In Benin, the cost of transporting of a tonne of corn or cotton seed meal is on average \$7.6US dollars over a distance of 100 km. This price is an average of \$8US in Burkina Faso and Niger, compared to\$ 23US per tonne of groundnut hay in The Gambia.

3.9 Processing stages up to the final commodity

3.9.1 Livestock/meat processing

Slaughtered animals are transformed into various products. The different steps are presented in Table 14. For this value chain, the processing consists of a sequence of steps through which a progressive passage from the live animal through the slaughtered animal, to the carcass and meat is achieved. The passage from live animals to fresh meat consists of three main stages:

- First stage of processing: slaughtered animal is transformed into a carcass and in a fifth quarter (offal and).
- Second stage of processing ensures the separation of the carcass waste (fascia, fat, bones)
- Third stage of processing is to use fresh meat for roasting, grilling, braising, boiling or turn them in- to kilichi or sausage products.

Table 14: Processing stages of the commodities

Stages	Cattle	Sheep/Goats	Pigs
	Slaughtering	Slaughtering	Slaughtering
	Skinning	Skinning/Singeing	Skinning/Singeing
	Washing	Washing	Washing
	Removal of feet and head	Removal of feet and head	Removal of feet and head
	Evisceration	Evisceration	Evisceration
	Chilling and/or Draining	Chilling and/or draining	Chilling and/or Draining
	Cutting carcass into parts	Cutting carcass into parts	Cutting carcass into parts
	Storage of fresh meat	Storage of fresh meat	Storage of fresh meat

Source: Ghana national consultant report (Oppong-Anane, 2013).

The major processing product of livestock is fresh meat. The products of modern cooked meat (pate, merguez, and sausage) represent a very small portion of processed meat. Different countries process fresh meat into different products (Table 15) such as:

- sausages and chitterlings, salted pork and dry meat goat "Tchassina" in Cabo Verde

- chawarma, grilled and cooked meat throughout the ECOWAS zone
- dry meat (Kilichi, Dehydrated Meat of Niger, Smoked meat) mainly in Niger and Nigeria.

Table 15: Various products from meat processing

Animal species and meat processing			
Cattle	Sheep	Goat	Pig
Beef	Mutton	Chevron	Pork
Khebab	Khebab	Khebab	Khebab
Sausage	Sausage	Sausage	Sausage
Grilled, <i>Kilichi</i> (of Niger)	Grilled	Grilled	Grilled
Fried meat	Fried meat	Fried meat	Fried meat
Cooked meat	Cooked meat	Cooked meat	Cooked meat

Source: Modified Ghana national consultant report (2013)

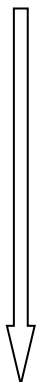
The above mentioned dry meat products are processed as follows:

- The Kilichi of Niger. Produced from fresh meat of good quality which is transformed into fine lamella before drying under plenty of sunshine and temperatures of around 40°C, humidity ranging from 15-70 per cent and wind speed less than 5m/s. The quality of *Kilichi* is improved by drying in solar ovens developed by the National Solar Energy Centre of Niger. Oven drying improves the organoleptic and bacteriological quality of the product and prolongs the shelf life for up to six months. There are three types of variants of *kilichi*: (i) *kilichi* the "Ja" or red kilichi, (ii) the kilichi "Fari" or white kilichi and (iii) the kilichi "Rumuzu" coated with oil and spices.
- Dehydrated Meat of Niger (Viande Déshydratée du Niger - VDN) VDN is the result of a process of processing and conservation of meat, developed by the Centre for economic and social experiments of West Africa in Niger. VDN is produced by a special meat drying technique which results in an easily storable and consumable product.
- Smoked meat. This is meat prepared from carcasses and offal from lean animals. These carcasses and offal are cut into large pieces ranging in weight from 100 grams to 1 kg. The pieces are boiled, dried and smoked. Niger is a traditional producer of smoked meat usually packaged in jute bags and exported to Nigeria.

3.9.2 Milk processing

Milk is processed using either the traditional /artisanal or modern process. Table 16 itemizes the various stages of the 2 processing methods.

Table 16: Processing stages of milk

Stages	Modern process	Tradition processes	
	Fermented products (sour milk, yoghurt)	Cheese (wagashi)	Tchoukou (Dry Cheese of Niger)
	Pre-heating	Pasteurization (boiling)	Measuring of fresh milk to be transformed
	Homogenization	Separating	Addition of rennet and ingredients
	Boiling (Pasteurization)	Salting	Coagulation of milk
	Fruit mixing	Shaping/Pressing	Separation of curd and lacto serum
	Bacteria addition	Ripening	Tillage of clot of milk into “leaf” of cheese to the sun
	Cooling	Storage	Drying the “leaf” of cheese in the sun
	Filling	Packaging	Packaging of the dry cheese

Source: Ghana national consultant report (2013), modified

Various products from milk processing

- Raw milk
- Pasteurized milk
- Fermented milk
- Cheese Wagashi and Cheese Tchoukou du Niger
- Butter
- Ghee

Traditional milk processing. This activity is usually carried out by women or herders wives and cooperatives. The main products offered are curd, butter, "butter oil" and cheese.

- Curded milk. Obtained by spontaneous and uncontrolled fermentation of milk after collection
- Butter. Solid butter is obtained by using all contents of the calabash in fermentation flasks to be churned manually. The butter comes in pellets of about 30 g. and serves as a base for the manufacture of liquid butter and in the manufacture of a traditional soap (“Saboni Salo” in Hausa zone of Niger and Nigeria) which has therapeutic properties.
- "Butter oil" (ghee). Obtained by heating the solid butter until evaporation of a certain amount of water. The ratio varies from 400 ml to 700 ml of liquid per litre of solid butter. Following this partial drying, salt, onions, cotton seed (to aggregate insalubrities of butter) and spices ("the kimba" for improving the taste) are added. This butter also sells well at production sites and has a shelf life of 6 to 12 months based on the level of residual moisture.
- Cheese.
- Dry cheese or Traditional cheese called "Tchoukou" in Hausa or "Tikomar" in Tamasheq is made by women who by this means, value the important milk production wintering. This is a dairy popular product which is well appreciated by Sahelian people.

- The cheese Wagashi. This is a soft cheese derived from a technology developed by the Fulanis along the West African coast (Benin, Ghana, Nigeria, and Togo) and elsewhere (Sudan). It is eaten fresh or fried then incorporated into sauces as a protein source.

Modern milk processing. This type of processing is performed at some semi-industrial and industrial units which have the necessary equipment to process raw milk. These units like SOLANI, Niger Lait, Laban, Kany lait, Lait Albarka, Laiterie du Sahel, Biolait, in Niger; Mali Lait SA, GAM, EUROLAIT et Diaby lait in Mali; FanMilk in Togo; Yoplait in Senegal; transform raw milk blended with imported milk powder.. They produce pasteurized milk, butter, ice cream and yoghurt. These products are sold as:

- Fermented milk curd packaged in bags of 250 ml (Solani, Niger lait, laban, FanMilk).
- Flavoured yoghurt (banana, strawberry, vanilla or pineapple), packaged in sachets, or bottles of 200-250 ml.
- Pasteurized butter packed in 250g and 1kg sizes and
- Various other small cream-based products (deguey).

3.10 Geographical location of the different components

It is difficult to geographically locate the various segments of the livestock/meat and dairy value chains like production, processing or marketing of animals and feedstuffs of animal origin. In general organized animal fattening and milk production are more frequently located in urban than in suburban and rural areas, while production and marketing of live animals is predominant in rural areas, and milk and meat processing and marketing are often urban based.

Most of the meat from ruminant sources is obtained from the northern part of countries (pastoral zone for Sahelian countries (Niger, Mali, Senegal, Burkina Faso) and savannah zone for costal countries (Ghana, Togo, Benin, Cote d'Ivoire). Tables 17 and 18 show the spatial distribution of the various components of the livestock/meat and milk value chains as well as the operating stakeholders. In beef production, however, once the early phase of cattle rearing is completed, the later stages of fattening is concentrated in the sub humid and savannah belts (Ilu, Frank and Annate 2013).

Table 17: Location of components and operating stakeholders of livestock/meat value chain

Components	Location	Stakeholders	Activities	Products
Primary Production	Pastoral areas, villages,	Livestock owners, herders, inputs suppliers, service providers, policy makers	Animal husbandry, input supplying, advisory services for animal husbandry,	Livestock
	urban and peri urban	Animal feed providers, veterinarians and para-vet., service providers, policy makers, etc.	Sheep and cattle fattening	Fattened and well-conditioned animals
Commercialization	On farms, collection, grouping, and consumption/terminal markets at national or international level.	Collectors, buyers(traders, lobbyists), Traders /importers, Traders /exporters, Brokers/dealers, offal collectors, butchers, policy makers,	Trade, transport	Live animals/ Livestock, various meat products (grilled meat, dried and grilled, carcass and pieces of red meat)
Transport	Transport of livestock Transport of meat and meat products	Owners and drivers Rail way, vehicles, motorbikes, bicycles, herders, policy makers, etc.	Transportation	Livestock, carcass and meat products
Processing	Households in villages and cities, at abattoirs and slaughter slabs, cooperatives	Household heads, butchers, cooks, retailers butchers, butcher grillers, restaurants	Processing and packaging	Carcass, grilled meat, dried and cooked meat (Kilichi, VDN), smoked meat, cooked meat...
Consumption	Camping, villages and cities	All categories of people at household, army, hospital	Grilling, cooking,	Grilled and cooked meat on various meals

Source: data compiled from national consultant report (2013)

Table 18: Location and Stakeholders of the milk value chain

Component	Location	Stakeholders	Activities	Products
Production	Pastoral area, villages,	Livestock owners, herders, inputs suppliers, service providers, policy makers	Animal husbandry, input supply , advisory services for animal husbandry,	Livestock and Milk,
	urban and peri urban	Animal feed providers, veterinarians and para-vets , services providers, policy makers	Livestock and milk production	Livestock and Milk,
Marketing	- On farms and at villages areas, - Collection Centres, households, shops, markets,	Village women, milk collectors, milk traders, collection centres, artisanal and modern processing units, Importers	collection, selling/buying of milk and milk sub products	Milk and milk sub products

Component	Location	Stakeholders	Activities	Products
	wholesaler stores at urban and peri urban area	of milk and milk products		
Transport	Rural and peri urban to urban, peri urban markets (transaction and consumption)	Owners and drivers of means of transport (boats, vehicles, motor-bikes, bicycles), Policy makers, Inputs suppliers	Transportation	local fresh milk, curd millet, various milk products
Processing	Cities and villages	Semi industrial and industrial units operators, cooperatives, Fulani women,	Traditional processing, modern processing, packaging	fresh milk, curd, butter, pasteurized milk, skimmed milk, cheese, yogurt, Deguey
Consumption	Households, restaurants, campuses, army barracks, hospitals,	Various categories of consumers	Consumption	Various meals: degue, foura, Thiakri, lah,

Source: Data compiled by the consultant from national consultant report (2013)

3.1.1 Amount of land & natural resources allocated to the livestock/meat value chains

The amount of land or grazing area allocated to livestock varies from one country to other. In some countries (Niger, Mali, Senegal, Burkina, Northern Nigeria) some areas – the pastoral zone - are dedicated to pastoralism by natural resource management laws or rural codes. About 23.5 per cent of ECOWAS space is allocated as livestock grazing area. Cabo Verde and Niger have respectively the lowest (0.2 per cent) and highest (48.9 per cent) proportion of land allocated to livestock activities (Table 19). In addition to pastoral zones, there are many water points, forest, pastoral enclaves and transhumant migratory routes. Access to pastoral areas and pastoral enclaves is free. However, in many countries, these enclaves or migratory routes exist only on paper.

Table 19: Area of land allocated to livestock grazing and movement

Countries	National Area km²	Agricultural land (km²)	Pastoral land (km²)	Proportion of land/grazing area at national level (per cent)
Benin	114 763	108 601	1 761	1.5
Burkina Faso	274 000	90 000	12 000	4.4
Cabo Verde	398 700	390	872	0.2
Côte d'Ivoire	322 463	202 000	110 000	34.1
Gambia	11 300	3 476	2 400	21.2
Ghana	239 460	136 282	89 000	37.2
Guinea	245 857	60 000	700	0.3
Guinea Bissau	36 125	21 100	12 680	35.1
Liberia	111 369	dna	dna	dna
Mali	1 247 000	396 190	350 000	28.1
Niger	1 267 000	65 347	620 000	48.9
Nigeria	923 768	90 989	42 753	4.6
Senegal	196 712	25 000	13 009	6.6
Sierra Leone	72 000	16 738	4 411	6.1
Togo	56 790	103 139	11 706	20.6
ECOWAS	5 517 307*	1 409 152**	1 271 292**	23.5**

NB: * Liberia included ** Liberia excluded

Source: Field data compiled by the consultant from national consultants reports (2013)

3.12 Competition over the utilization of land or other natural resources

Agriculture is the main socio- economic activity of about 80% of the workforce. Livestock production is the second most important economic activity of the rural population. The production system is extensive (agro pastoral and pastoral (nomadism and transhumance)) mainly based on the exploitation of the natural pasture resources. In customary law, all pastoral enclaves are reserved as grazing area. Livestock rearing appears to be very land consuming because of its extensive nature and the low carrying capacity of natural pastures. Competition with crop, vegetable, fruit production and forestry is very strong and it is the main reason of conflicts between users of natural resources (land, forests and water).

In general, the farmers rely on land and other natural resources for their livelihoods. The accelerating degradation of the natural resource base, i.e. loss of soil fertility and deforestation, expansion of the Sahara and the extension of crop production due to increasing human population, have resulted in increased competition over land and other natural resource uses. The extension of crop production into grazing areas has reduced the availability of natural grazing areas and intensified conflicts between livestock owners and crop farmers. A further challenge is the encroachment by crop farmers on transhumant cattle migratory routes which makes it difficult for cattle to access grazing areas and watering points. Further complication has emerged over the recent past years with the development of artisanal mining in some livestock grazing areas in countries like Burkina Faso, Guinea, Mali, and Niger.

3.13 Impact of the livestock/meat value chains on environment

Livestock could have a positive or negative impact on the environment either directly or indirectly. The positive and negative impacts of the milk and livestock/meat value chain are summarized below.

Positive environmental impacts of milk and meat production and processing:

- Use of crop residues and by-products as animal feed.
- Use of manure and feed refusals for later use in crop fields to improve soil fertility and to reduce the use of chemical fertilisers and the associated risks of environmental pollution.
- Increased crop production and value addition potential
- Restocking of natural areas through the dissemination of forest and fodder species seeds,
- Recovery and increased value of fallow and unusable areas by agriculture.

Negative environmental impacts of milk and meat production and processing:

- Methane emission from animals/cattle (greenhouse gas emissions per unit of milk output are higher in extensive than intensive livestock systems); gas is an important factor in water pollution,
- Intensive livestock production requires large amount of water ((dairy animals consume large amounts of water, large amounts also required for cleaning)
- High energy use and also large tracts of land for food production of this type of livestock, thus contributing to deforestation and loss of biodiversity,
- Overgrazing leading to decreases in productivity of grasslands, loss of vegetation and changes in biodiversity and leading to soil erosion,
- Trampling which affects soil structure,
- Transfer of nutrients from forage producing areas to other sites (rangelands and crop fields – crop residues),
- Contamination (dung and urine) of surface and underground water resources,
- Inefficient collection and processing of waste (blood, rumen content, hooves and horns) generated from slaughter facilities ultimately cause environment pollution,
- The various stages of livestock production, processing of meat, milk and by-products from slaughterhouses, livestock markets and processing units are generators of environmental nuisance (odour or rotting manure and other waste stored without specific protection against proliferation of insects (houseflies , cockroaches and rodents),
- The distribution of milk and milk products generate packaging wastes, plastic (bags, pots or buckets).

3.14 Production and value addition potential

Livestock/meat value chain plays an important role in the national economy in terms of inter-regional balance, nutritional status of rural populations, management of space, employment and incomes generation. The sector contributes to the budget of the State and local authorities through various taxes (stampage fees, patents and various health documents). In some coastal countries like Ghana the value addition potential of pigs is higher than that of ruminants because pork may be processed into more popular products. In Sahelian countries, the production and trade of live animals is an important source of income for states (market taxes), traders (value added at different types of markets) and producers by adding value to crop residues, and draft animal power

On farm production cost for a kilogram of meat is less than \$ 4\$ US dollars in many countries but rises to \$ 6 US dollars for fresh meat and \$12 US dollars for a kg of grilled meat. In Cote d'Ivoire, the kg of imported frozen meat can costs \$8 to \$16 US dollars according to its quality. However the lack of reliable channel of collection and processing causes losses in terms of value addition of the marketed and processed meat. Milk collection and processing improve and generate incomes for various milk value chain stakeholders. For example, in Benin, 5 litres of milk at the farm gate cost \$ 2 US dollars. When the same 5 litres of milk is processed into 1 kg of local cheese (Wagashi) it sells for \$ 4 US dollars at the urban market.

3.15 Current and potential (future) domestic demand of meat and milk

3.15.1 Domestic demand and price of meat

Local demand for meat increases with population growth. Demand for meat in the ECOWAS region was about 3.73 million tonnes in 2011 while total production was estimated at 2.01 million tonnes for the same year, thus covering only 54.1 per cent of the demand with an estimated deficit of 1.71 million tonnes in 2011 and 1.83 million tonnes in 2012. In order to cover a part of the meat deficit in 2011, a total of about 195,247 metric tonnes was imported from Europe, America and Asia, and another 100,353 tonnes through intra-regional flows (Table 20).

Across the region, a per capita consumption of livestock meat was estimated at 6.5 kg. The value rose to 8.4 kg when all categories of meat (fish, poultry etc.) were included. The gap between production and demand was estimated at - 4.5 kg per capita across the region with a range spreading from -10.8kg in Cote d'Ivoire to +7.8 kg per capita in Niger. Guinea was the only other country with a positive per capita meat consumption of +3.2 kg in 2011 (Table 20). In 2012 Niger continued to produce in excess of demand (Table 21).

The high costs of livestock's meat and the low household income have led the most vulnerable groups to move towards the consumption of fish and game. In Cote d'Ivoire, the total meat consumption decreased from 116,424 tonnes in 2011 to 106,926 tonnes in 2012 (a decrease of 8.8 per cent). In this country the decline reflects a substitution of meat with fish and other products due to the increase of consumer price of meat which increased by about 6.3 per cent / year for meat with bones and 6.7 per cent / year meat without bones.

Table 20: The demand and supply of meat in 2011 in ECOWAS countries

Countries	Country Human Population	Per capita (kg)	Needs (tonnes)	Production (tonnes)	Gap (tonnes)	Per Capita gap (kg)	Import (tonnes)	Export
Benin	9 221 455	8.4	110 657	61 646	-49 011	-5.3	15 789	19 078
Burkina Faso	16 249 000	7.7	194 988	125 029	-69 959	-4.3	50	81 275
Cabo Verde	491 683	8.6	5 900	4 235	-1 665	-3.4	1 390	dna
Côte d'Ivoire ¹⁰	24 030 347	1	288 364	28 028	-260 336	-10.8	5 5267	dna
Gambia	1 700 000	4.4	20 400	7 535	-12 865	-7.6	25 952	dna

¹⁰ The national per capita consumption of meat is 5kg in 2011 when the national meat production cover less than 1 kg per capita/year in Cote d'Ivoire

Countries	Country Human Population	Per capita (kg)	Needs (tonnes)	Production (tonnes)	Gap (tonnes)	Per Capita gap (kg)	Import (tonnes)	Export
Ghana	25 200 000	13.9	302 400	239 088	-63 312	-2.5	23 867	dna
Guinea	11 200 000	15.2	134 400	170 605	36 205	3.2	54 768	32.5
Guinea Bissau	1 520 830	1.5	18 250	2 319	-15 931	-10.5	35	dna
Mali	14 528 662	5.5	174 344	80 054	-94 290	-6.5	dna	dna
Niger	15 730 754	19.8	188 769	311 100	122 331	7.8	dna	dna
Nigeria	164 643 297	8	1 975 720	790 288	-1 185 432	-7.2	1 513	dna
Senegal	12 509 434	15.5	150 113	125 315	-24 798	-2.0	6 616	dna
Sierra Leone	7 014 000	2	84 168	42 334	-41 834	-6.0	479.8	dna
Togo ¹¹	6 367 000	6	76 404	27 246	-49 158	-7.7	10 000	dna
ECOWAS	310 406 462	8.4	3 724 877	2 014 822	- 1 710 055	-4.5	195 247	100353

NB: Calculation of the needs is based on the per capita consumption of 12 Kg /person/year of livestock meat (fish and poultry not included). Source: Field data compiled by the consultant from national consultants reports (2013)

Table 21: Current and Future potential domestic demand of meat in ECOWAS zone

Countries	Year 2012				Year 2015	
	Population (persons)	Demand (tonnes)	Production (tonnes)	Gap	Population (persons)	Demand (tonnes)
Benin	9 900 000	118 800	61 645	-61 908	10 553 956	126 647
Burkina Faso	16 752 719	201 033	130 600	70 433	18 359 519	251525
Cabo Verde	491 683	5 900	4 235	-1 665.2	dna	13 273.3
Côte d'Ivoire ¹²	24 030 347	288 364	62 939	-53 485	25 493 795	123 514
Gambia	1 700 000	20 400	8 799	17 153	1 882 000	46 190
Ghana	25 200 000	302 400	113 088	-237 192	26 600 000	319 200
Guinea	11 200 000	134 400	170 605	-2 613	12 275 000	184 124
Guinea Bissau	1 520 830	18 250	2 319	-15 931	1 632 611	19 591
Mali	16 002 325	192 028	80 054	-132 174	17 639 410	241 659
Niger	17 129 076	205 549	311 100	105 551	19 212 354	230 548
Nigeria	170 000 000	2 040 000	600 000	-700 000	187 000 000	1 461 200
Senegal	12 509 434	150 113	125 315	-24 798	13 709 845	153 716
Sierra Leone	7 014 000	84 168	142 334	-770 166	8 000 000	100 000
Togo	6 367 000	76 404	28 191	-48 213	dna	dna
ECOWAS	319 817 414	3 837 809	1 841 224	-1 824 864	342 358 490	3 257 914

Source: Estimations of consultant based on population figures and current consumption rate

¹¹In Togo, the cost of the meat importation is about 10 million of US dollars in 2010 and the value of milk and milk product importation was estimated at 9.2 millions of US dollars.

¹²Cote d'Ivoire: national meat consumption in 2011

3.15.2 Domestic demand and supply of milk of ECOWAS zone

Table 22 presents the domestic production and demand of milk in ECOWAS countries. In 2011 production was estimated to 4.92 million tonnes milk equivalent when the need was about 18.71 million tonnes of milk equivalent, while in 2012, the need was about 19.82 million tonnes of milk equivalent against a production estimate of 4.05 million tonnes (Table 23). Milk produced in 2011 covered about 26.30 per cent of the regional demand for milk. The production gap was estimated at 13.8 million tonnes milk equivalent. During the same year, per capita gap was -45 litres with highest per capita deficit recorded in Cote d'Ivoire (-60 litres) and Sierra Leone (-59 litres). Surplus production was recorded in Mali (530 421 tonnes) and Niger (14 368 tonnes).

As shown on table 23, estimates for 2015 suggest an increase in both the population figures (342.4 million) and milk production (21.3 million tonnes of milk equivalent), suggesting that Member States will continue to import milk to meet an equally growing demand.

Table 22: Milk production and demand/need in ECOWAS countries in 2011

Countries	Human Population	Per capita (L/man/year)	Needs (tonnes)	Production (tonnes)	Gap (tonnes)	Per capita gap (litres)	Milk imported (tonnes)
Benin	9 221 455	10.4	558 876	96 107	-462 769	-50	15
Burkina Faso	16 249 000	10.9	984 788	177 492	-807 296	-50	16 260
Cabo Verde	491 683	20.9	29 799	10 285	-19 514	-40	15 611
Côte d'Ivoire	24 030 347	0.9	1 456 385	20 829	-1 435 556	-60	154 746
Gambia	1 700 000	14.5	103 030	24 597	-78 433	-46	33 210
Ghana	25 200 000	2.2	1 527 273	56 160	-1 471 113	-58	27 618.5
Guinea	11 200 000	13.1	678 788	147 013	-531 775	-47	17 801
Guinea Bis-sau	1 520 830	2.3	92 172	3 567	-88 605	-58	2 226
Mali	14 528 662	97.1	880 525	1 410 946	530 421	37	dna
Niger	15 730 754	61.5	953 379	967 747	14 368	1	11 390
Nigeria	163 000 000	11	9 878 788	1 788 856	-8 089 932	-50	162 417
Senegal	12 509 434	15.2	758 148	190 025	-568 123	-45	229 690
Sierra Leone	7 014 000	1.9	425 091	13 645	-411 446	-59	24 500
Togo	6 367 000	2.1	385 879	13 567	-372 312	-58	dna
ECOWAS	30 8763 165	18.9	18 712 919	4 920 836	-13 792 083	-45	695 470

NB: Norm of FAO is about 62 litres/person/year

Source: Estimations of consultant based on population figures and current consumption rate

Table 23: Current and future potential domestic demand of milk in ECOWAS zone

Countries	Year 2012				Year 2015	
	Population (persons)	Demand (tonnes)	Production (tonnes)	Gap (tonnes)	Population (persons)	Demand (tonnes)
Benin	9 900 000	613 800	101 539	-512 261	10 553 956	654 345
Burkina Faso	16 752 719	1 038 669	281 611	-757 058	18 359 519	1 138 290
Cabo Verde	491 683	30 484	10 285	-20 199	dna	18 165
Côte d'Ivoire	24 030 347	1 489 882	62 939	-1 426 943	25 493 795	1 580 615
Gambia	1 700 000	105 400	24 597	-80 803	1 882 000	116 684
Ghana	25 200 000	1 562 400	56 160	-1 506 240	26 600 000	1 649 200
Guinea	11 200 000	694 400	14 7013	-547 387	12 275 000	761 050
Guinea Bissau	1 520 830	94 291	2 319	-91 972	1 632 611	101 222
Mali	16 002 325	992 144	205 500	-786 644	17 639 410	1 093 643
Niger	17 129 076	1 062 003	1 043 080	-18 923	19 212 354	1 191 166
Nigeria	170 000 000	10 540 000	1 860 410	-8 679 590	187 000 000	11 594 000
Senegal	12 509 434	775 585	180 342	-595 243	13 709 845	850 010
Sierra Leone	7014 000	434 868	56 112	-378 756	8 000 000	496 000
Togo	6 367 000	394 754	13 567	-381 187	dna	dna
ECOWAS	319 817 414	19 828 680	4 045 474	-15 783 206	342 358 490	21 244 390

NB: Calculation done by considering the per capita demand of milk at 62 litres/year/person;

Source: Estimations of consultant

3.16 Specific features of products, including product differentiation when targeting different types of clients

Across the region, carcass dressing and other processing activities (de-boning, grinding) are not common. Apart from a few prepared cooked or cold meat products such as sausages, ham, and pâtés which are limited both in quantity and availability, meat is sold in chunks without being subject to specific cutting. Cold and processed cuts remain specific products found only in cities. When the meat is cut according to international standards or sold in supermarkets, it is intended for high-income customers. In general, little effort is made to differentiate between meat from older animals - those which finished their productive life producing milk or providing draft power, and meat from young animals - calves, lambs or kids. Quality evaluation of animals for slaughter is rather judgmental at livestock markets. It is done according to a know-how acquired over time by buyers and their assistants in evaluating body condition of the animals on offer.

The WAEMU Commission adopted in January 2000 a classification grid of meats export. According to the species, it specifies four to six points with two major classes: the extra and first categories which include as criteria, carcass conformation and excellent muscle development with a very good condition and fattening, a live weight exceeding 175 kg for cattle, 20 kg for sheep and 15 kg for goats in the adult group.

Though milk is sold fresh there is a relatively higher degree of product differentiation. Fresh milk is processed into *Wagashi* cheese, *dry cheese* or *Tchoukou*, fermented cultured milk and ghee targeted at specific ethnic groups (Hausa). Milk and milk product when properly packed, are designed for high-income customers. The population in low and middle income categories simply buy what is presented on the market. The high valued milk products are available only in supermarkets.

3.17 The products capacity to fulfill international requirements (sanitary and other standards)

In terms of production, processing, inspection by competent health authorities and packaging, the situation is still far from meeting international requirements and other standards for animal production. Critical Control Points in the rural milk collection systems target milk production, especially aspects concerning the health of cows during milking, milk hygiene, milk procurement (sources, time of collection, distance travelled, quality control procedures, type of vessels for handling the milk during bulking (mixing of milk from different sources), mode of transport); milk handling (time to re-sale, storage, method of cleaning, water source); milk sale (type of buyers, quantities sold, packaging, prices received); and hygiene of premises and personnel (In Ilu, Frank and Annate 2013).

With regards to livestock and meat for which Sahelian countries have an important export potential for regional and international markets, there is a serious lack of adequate infrastructure to guaranty meeting the hygienic and international standards. The standards, laws and regulations are detailed in various international documents and agreements and treaties including: the health requirements of the World Trade Organization; Technical Barriers to Trade; Sanitary and Phytosanitary Agreements; health standards of the Codex Alimentarius and the OIE (the World Animal Health Organization); Hazard Analysis and Critical Control Points (HACCP); and Regulation No 07/2007/CM/UEMOA on the safety of plants, animals and food in the UEMOA. The requirement to satisfy all the international standards, laws and regulation set by various organizations for the export of live animal, meat, milk and milk products in and out of ECOWAS region is difficult to fulfil due to lack of adequate infrastructure. In addition, in majority of the countries, some Trans-boundary Animal Diseases (TAD) like Contagious Bovine Pleuropneumonia (CBPP), Peste des Petits Ruminants (PPR) and African Swine Fever (ASF) remain a serious problem for veterinary services.

3.18 Urban rural relationships

Generally most producers of meat and milk are in the rural areas whereas the majority of consumers are in the urban areas. The demand and consumption of livestock products such as meat, milk and dairy products are highly influenced by the household revenue. The per capita consumption of these products is higher in urban areas than rural areas because of the income level differentials. However, if the animal population is in rural zone, the main factors inputs for livestock, meat, milk and dairy products production such as veterinary drugs and vaccines, manufactured animal feed, means of transport, units of processing and marketing are in all in urban areas.

3.19 Synergies with other activities

The livestock/meat and dairy value chains have various links of complementarily and synergy with various agricultural commodities in ECOWAS Member States. These commodities are maize, rice, millet sorghum, cowpea, wheat, sugar cane, ground nut, potato, cotton, cassava, oil-palm, etc. The products and by-products from these crops play important role in the livestock industry. In mixed crop/livestock production systems, crops and livestock interact to create a synergy. Crop residues are used for animal feed; the main feeding method of cereal crop residues is *in situ* grazing on harvested fields. As manure is an important soil fertility amendment in farming systems, farmers consider manure dropped directly on arable fields to be an important input to crop production. Nutrients are also captured from rangelands and transported to crop fields in the form of manure. In addition, hides and skin from cattle, sheep and goats are used for the leather industry and in particular for the manufacturing of bags and footwear. Cattle (bullocks) are used for ani-

mal traction to help with land cultivation, carting of water and feed for livestock as well as carting manure for crop production. Livestock and livestock products are sometimes sold to generate income to finance crop production.

4. INFRASTRUCTURE AND OTHER SUPPORT SERVICES

4.1 Transport and support services

4.1.1 Live animal transportation

There are no appropriately designed transport facilities for live animals and animal products including chilled or frozen products. To date, there is no national or regional legislation on the transport of animals or products. The preferred modes of transport for the importation/exportation of cattle are: by road (truck and various types of vehicles), rail, waterways (sea, rivers and lakes), and through migratory routes on hoof. Transportation by train and boat is usually reserved for cattle, small ruminants and pigs, and Trucking is more frequent than the use of boats. Trucking live animals and animal products is usually done using general purpose open commercial vehicles such as trucks, trailers and semi-trailers with no modifications to better accommodate the animals. The animals are usually loaded onto such vehicles using ramps and moved from main to terminal markets.

Moving live animals on hoof is the most common mode of moving trade animals and although it is relatively cheaper, it often results in weight losses with a decrease in the market value of the animals. In addition, it carries the risk of total losses through accidents or armed robbery attacks.

Small ruminants and pigs are sometimes transported over short distances from collecting markets to farms and vice versa, using bicycles and motor bicycles.

Under these circumstances, it is not surprising that safe and humane regulations for livestock transportation are never respected. Moreover, the transporters especially the truckers are usually subjected to excessive and abusive administrative controls by the police and customs officers who levy illegal taxes and incidental expenses that often result in higher prices for consumers at various stages along the chain.

According to livestock exporters at the Tourakou market in Niamey (Niger), so called incidentals expenses may amount to \$ 1200 to 1400 US dollars per truck carrying 130 to 150 sheep on the route Niamey – Abidjan, and \$ 700 to 800 US dollars per truck for those carrying sheep on the on the Niamey-Kaduna-Lagos route

4.1.2 Meat transportation

The transportation of meat from slaughterhouses to butchers is carried out using a variety of unsuitable means (truck, carts, motorcycle, bicycle, etc.). The lack of adequate transportation facilities for meat (i.e. refrigerated truck) is a major constraint to marketing and export. Cold storage facilities for freezing meat prior to transportation to reduce contamination are often not available.

4.1.3 Milk transportation

Most herdsmen/producers normally sell their milk at the kraal (farm gate) or in their homes. Bicycles and motor-cycles are the usual means of moving milk from the farm to collection centres, and bulked milk to processing centres using different types and sizes of containers Refrigerated trucks are sometimes used by the larger dairies to move bulked milk for processing.

4.1.4 Support services and infrastructure

Livestock/meat and dairy value chains development is support by various public and private services (veterinary services, laboratories, research and training institutions, projects and programmes, NGOs). They also make use of different infrastructures. The main livestock infrastructures are.

Production Infrastructure - Infrastructure for supporting livestock production are grazing/pastoral areas with or without migratory pathways, pastoral watering points, vaccination parks, laboratories, feed manufacturing facilities and feed stores, etc.

Commercialization Infrastructure - Livestock markets, loading ramps, roads and various vehicles for moving livestock and livestock products, milk collection centres, etc.

Processing Infrastructure. Abattoirs, slaughter slabs, milk processing units, etc.

4.2 Packaging and stocking costs of output

Meat products are rarely packaged, and retail butchers use plastic bags (black, blue, white) and empty bags of flour or cement. The costs of these bags and paper wrapping are: 100 CFAF for the leaf vacuum flour bag, 200 CFAF per pack of 50-60 bags (one kg of meat), 1 500 CFAF per pack of 50 bags which can each contain 10 kg of meat. Sometimes meat sold in market butchers stalls is packed in teak leaves, especially in the rural areas. Meat sold in butchers and meat shops are wrapped placed in polythene bags, whereas meat sold in the supermarkets are appropriately packed in sealed polythene bags. Cold stores provide storage facilities for imported meat but may also store locally produced meat for short periods.

Most of the milk is marketed through the informal sector with the use of measuring utensils, mainly cups and recycled containers ranging from 100 ml, 5 litres, and 20-30 litres for empty vegetable oil containers. Milk is packaged in pots and plastic bags containers. The cost of packaging is between 20 and 40 CFAF for a litre of milk. With the emergence of women's' group milk processing centres and milk processing units, the use of plastic packaging materials is becoming common. These packaging materials are all imported and the costs may make up to about 15 per cent of the input costs in Niger, Mali, Burkina Faso and Senegal.

4.3 Equipment and required investments

The required equipment and investments vary widely and depend on the livestock species, system of production, type and scale of processing and marketing, and include: housing, meat processing equipment and milking and dairy processing machinery. Others are generators, refrigerators, deep freezers, vans and trucks. Related depreciation also varies widely and depends mostly on the cost and quality of investment. Table 24 presents some of the required infrastructure and equipment cited in project proposals from the countries.

The main investment and equipment required for livestock/meat and milk production, processing and commercialization are.

- Production: land, feed and feed stores, housing, machinery and equipment, water sources, breeding stock, health care facilities, financial capital.

- Processing: abattoirs, meat and dairy processing centres, cleaning and disinfection equipment, cold storage facilities, financial capital.
- Commercialization: livestock markets, transportation equipment, storage, collection centres, vans and trucks, financial capital.
- Services/equipment: generators, refrigerators and deep freezers (for storage of vaccines and biological specimen for post mortem), laboratories, skilled labour, financial capital.

According to the frequency of demand, the following in decreasing order of requirement are the required infrastructure and equipment : (1) livestock markets and abattoirs, (2) milk collection centres, , (3) cold rooms for meat storage, (4) refrigerated and isotherm trucks, (5) mini dairy and livestock trucks, (6) watering points (but they are priority in all Sahelian countries), (6) dairies and (7) Pasture and transhumance routes (required in all Sahelian countries).

Table 24: Livestock/meat and dairy value chains required infrastructure and equipment

Countries	Production Infrastructure			Infrastructure and equipment for trade, processing and transport								
	Transhu- mance routes	Pasto- ral wa- tering points	Vaccina- tion parks	Livestock & Meat value chain					Milk Value chain			
				Live- stock markets	Abat- toirs	Cold room s	live- stock truck	Refrigerat- ed truck	Collec- tion centres	Dair- ies	Mini dair- ies	Iso- therm trucks
Benin	dna	dna	dna	dna	dna	dna	dna	dna	dna	dna	dna	dna
Burkina Faso				x	x	x	x	x	x	x	x	x
Cabo Verde				x	x							
Côte d'Ivoire				x	x	x	x	x	x	x	x	x
Gambia	x	x		x	x	x			x		x	x
Ghana	x	x	x	x	x	x		x	x	x	x	x
Guinea		x	x	x	x	x		x	x	x	x	x
Guinea Bissau				x	x		x		x			
Mali	x	x	x	x	x	x	x	x	x	x	x	x
Niger	x	x		x	x	x	x	x	x	x	x	x
Nigeria		x	x	x	x	x	x	x	x		x	x
Senegal			x	x			x	x				x
Sierra Leone				x	x	x			x			
Togo	x	x		x	x	x	x	x	x			
Frequen- cy	5	7	5	12	12	10	8	9	11	6	8	9

4.4 Extension and technical support

After independence, many of the ECOWAS Member States instituted an awareness creating system to sensitize the Ministries of agriculture through their Directorate of Agricultural Extension Services. These services oversee the dissemination of agricultural technology through an extension delivery service that ensures that appropriate technology is transferred to all stakeholders in the live-stock/meat and milk value chains in the country. Thus countries such as Niger Mali, Niger, Senegal, elaborated and implemented national agricultural extension programmes which consist of material and methodological support for the dissemination of simple and adapted innovative technologies and practices in rural areas.

Currently, livestock extension service is the responsibility of the animal health field services and does not form integral part of the extension services offered to crop producers. The extension system is relatively unstructured with no set schedule of visits or seasonally based extension messages. In general, the same staff members are responsible for disease surveillance and animal health service delivery as well as livestock husbandry.

The weakness of the capacity of the national extension system and the weakness of the response of the normative state services have led some actors to address this issue, including non-state actors such as national and international NGOs and also national associations of farmers. In the area of the livestock / meat and milk, NGOs and farmers associations disseminate a wide range of technologies related to food safety (feed banks for livestock), animal fattening, milk production and collection, feed, forage, animal health, breeding, processing of animal products (milk and meat), herd and range-land management, control of bush fires, and integrated management of natural resources.

4.5 Quality control and certification

Quality control and certification are ensured by the services or directorates in charge of inspection of food of animal origin and livestock feed. Currently, staff members of the Animal Health and Production Services are responsible for meat inspection at slaughter facilities. This service plays a crucial role in the certification of food and products of animal origin with respect to the SPS. Some countries (Mali, Niger) have national laws for regulating, quality control and certification. These laws and decrees set the conditions of production, processing and marketing meat, milk and dairy products. Quality control and certification of meat refers among others to the regulation texts for sanitary inspection and safety of animal origin products destined for human consumption.

In the ECOWAS region, Member States have set up National Councils/ Agencies for verification and normalization. These national councils set conformity norms for imported products and ensure the protection of consumers by publishing information on the quality of imported products. In Senegal, quality control is carried out by the importing enterprises themselves (internal quality control) and by the relevant public services (hygiene and veterinary services, ministries of trade and environment). Guidelines have recently been produced for production and processing enterprises based on the HACCP or the Management System for Food with ISO 22 000 norms.

In Sierra Leone, the Sierra Leone Standards Bureau coordinates all standards related issues in the country. In Niger, the decree n° 016/MC/I/PSP/DNQM of March 7th, 2005, created the norm NN-01-01-001 for Kilichi. For the WAEMU member states, in the absence of national laws on meat inspection, the communal norm n°3/CE/CEBV/CM/71 of the former Economic Community for Live-stock and Meat was adopted by WAEMU to regulate live animals movement for commercial slaughtering.

In general, specialized laboratories (veterinary and others) are required to carry out further analysis and investigations to confirm or refute the quality of products before the issuance of a safety certificate. In practice, however, this process and legislation is rarely followed.

5. MARKETING, TRADE AND PRICES

5.1 Produced and traded quantities of the commodity

Milk and meat production in the region in 2012 was estimated at about 4.05 million and 1.84 million tonnes respectively (compiled from national reports 2013), and this contributed to meeting domestic. Lack of reliable data does not permit a disaggregation of the figures into amounts consumed and traded by the producers.

In addition, available information did not allow for a quantification of intra-regional flows of meat, or of live animals that are usually traded between Sahelian (Burkina Faso, Mali and Niger) and coastal countries that have a deficit in meat production, or of the imported frozen meat from Europe, and Latin America. As indicated earlier, all ECOWAS Member States are net importers of milk and milk products. About 40-50 per cent of the produced milk is auto consumed; the rest is sold fresh by mainly women or processed under traditional and/or modern technologies. Every year, thousands of tonnes of imported milk products and powder are traded and processed into various products through the ECOWAS zone.

5.2 Home consumption and marketed shares of the produced good

It was estimated that in 2012, there were 319 817 414 potential of consumers in the region, while the estimated milk production figure was 4.05 million tonnes. On-farm consumption of milk varies from one country to another as shown in Table 25.

Table 25: On-farm milk consumption per cent

Countries	On-farm consumption	Fresh milk sold	Traditional processing	Modern processing
Benin	10-20	80-90	-	-
Cabo Verde	89.7	-	5.9	-
Gambia	20-30	70-80	-	-
Ghana	10	30	40	10
Niger	80	-	10	10
Sierra Leone	18	82	-	-

In the Sahelian countries like Niger and Mali, about 20 to 30 per cent of the population use milk as a staple food and up to 80 per cent of the milk produced in pastoral zone is consumed by the household. In other words, all of the national production is consumed and an important amount is imported each year. While household meat consumption data is not available, it is known that meat from controlled and regulated slaughtering facilities represents only 30 per cent of potential meat production, which allows for an estimation of a per capita meat consumption of 8.4 kg across the region in 2011.

5.3 Producer price of animals, meat and milk

Producer price of livestock varies according to breeds, age, size, locations, period of the year and the country. In general, live animal producer price for Sahelian ruminant breeds is higher than that of ruminant breeds from the coastal humid zone. Table 26 summarizes the average price for live animals, meat and milk. Mali and Niger are the two countries which exploit camel for meat production. The average price of live camel in these countries is about \$ 578 and \$ 479 US dollars respectively. In addition, the price of a kilogram of camel meat is the same as that of cattle in the market.

Table 26: Producer and consumer average price (in \$US) of live animals, meat and milk in ECOWAS zone in 2011

Countries	Live animal price \$/head				Consumer meat price \$/kg			Milk price \$/litre	
	Cattle	Sheep	Goats	Pigs	Cattles	Small ruminants	Pigs	Producers	Consumers
Benin	500	80.0	45.0	50.0	4.0	4.6	3.0	0.4	0.5
Burkina Faso	587	117.0	71.0	dna	3.2	dna	dna	0.8	1.6
Cabo Verde	dna	dna	74.0	120.0	8.3	9.3	5.6	1.1	1.4
Côte d'Ivoire	520	150.0	115.0	dna	5.0	6.0	dna	0.6	1.2
Gambia	dna	55.0	37.0	dna	2.7	3.1	1.9	0.5	1.4
Ghana	538	113.0	67.0	132.0	5.5	5.9	3.5	1.6	1.8
Guinea	350	61.0	52.0	86.0	3.5	4.1	3.1	1.2	1.4
Guinea Bissau	350	55.0	43.0	100.0	4.5	5.0	2.8	0.8	2.0
Mali	433	90.0	54.0	dna	4.3	dna	dna	dna	dna
Niger	373	73.0	41.0	dna	5.0	6.0	dna	0.6	1.0
Nigeria	650	92.0	59.0	98.0	4.9	4.5	4.2	0.8	1.0
Senegal	482	108.0	60.0	103.0	4.4	5.0	2.6	0.6	1.1
Sierra Leone	486	64.0	41.0	126.0	3.0	3.5	2.1	1.3	2.5
Togo	712	129.0	59.0	72.0	3.5	3.7	2.6	0.5	0.9
ECOWAS	498.3	91.3	58.4	98.6	4.4	5.1	3.1	0.8	1.4

Source: Field data compiled by the consultant from national consultants' reports (2013)

5.4 Consumer price for livestock and livestock products in the ECOWAS region

Table 26 above presents the price of livestock and livestock products across the region. The highest price for live cattle was recorded in Togo (\$ 712US dollars) and lowest in Guinea and Guinea Bissau (\$ 350 US dollars) where the N'Dama breed is dominant. The top prices recorded across the region for sheep, goats and pigs were \$ 150, \$ 115 and \$ 132 US dollars respectively, while the lowest prices for the same species were \$ 55, \$ 37 and \$ 50 US dollars respectively. A kg of beef, small

ruminant meat and pork was sold on the average for \$ 4.4, \$ 5.1, and \$ 3.1 US dollars; respectively, while a litre of milk ranged between \$0.4 and \$ 1.6 US dollars.

5.5 Location of the main livestock markets in the region

There are three main categories of livestock markets in region:

- Primary collection Markets located in rural production areas
- Secondary or Intermediary Markets located in secondary cities
- Terminal Markets situated in big cities and near country borders

The size and importance of the market reflects the importance of livestock in country. Countries like Burkina Faso and Niger show a large number of markets and dairies (Table 27).

Table 27: Number of livestock markets and abattoirs in ECOWAS countries

Countries	Total number of live-stock markets	Number of modern live-stock markets	Total number of abat-toirs	Number of modern abat-toirs (with cold rooms)	Number of Municipal Abat-toirs	Number of Slaughter slabs	Dairies	
							Modern	artisanal
Benin	54	dna	2	1	dna	1	2	dna
Burkina Faso	236	59	344	3	33	308	20	dna
Cabo Verde	1	dna	22	1	dna	22	dna	dna
Côte d'Ivoire	21	2	300	dna	5	295	10	dna
Gambia	27	dna	4	1	26	16	1	dna
Ghana	15	2	142	4	138	dna	34	15
Guinea	130	1	50	dna	19	31	5	130
Guinea Bissau	6	dna	3	dna	3	25	dna	1
Mali	dna	60	295	9	86	200	45	dna
Niger	635	300	312	4	6	302	5	25
Nigeria	833	4	2 083	4	144	1 935	14	dna
Senegal	62	7	49	10	dna	39	46	dna
Sierra Leone	15	1	2	dna	14	45	dna	dna
Togo	22	dna	49	1	25	23	dna	dna
ECOWAS	2 057	436	3 657	38	413	3 242	182	171

Source: Field data compiled by the consultant from national consultants' reports (2013)

5.6 Number of the actual and potential consumers

The number of actual and potential consumers varies from one country to another: In Nigeria the potential number of consumers was estimated at 160 million while in Burkina Faso the estimate was 16 million. In addition, within a country, the actual and potential number of consumers is dependent on the income level of the population and the level of economic activities in rural or urban areas. In Ghana, 5 per cent of the population do not consume livestock products. It was estimated that currently (2011) about 23.94 million people frequently consume meat while less than 30 per cent of the 312 237 354 people in the region consume locally produced milk and milk products.

5.7 Seasonality in prices and quantities of the outputs

Local milk production levels fluctuate throughout the year, ranging from 2 litres/cow/day during the wet season (June to October) to less than 0.5 litre/cow/day during the dry and hot period (March - May), and this is reflected in the market price of raw milk as well, going from \$ 0.5 and \$1.2 US dollars/litre at the farm gate during the wet and dry seasons respectively. Seasonally related price fluctuation is also observed with a fall during the rainy season in pastoral areas. Prices nevertheless routinely go up during festive seasons – Tabaski and Christmas.

5.8 Socio-economic features of current and potential customers, including spending capacities

The incidence of poverty is higher in rural than in urban areas due mainly to relatively higher unemployment and underemployment rates, particularly among women and the youths. In The Gambia, youth unemployment rate was estimated at over 40 per cent and reached up to 70 per cent for women who are usually engaged in low productivity rural subsistence agriculture.

Livestock products consumption tends to increase with increasing literacy and household incomes. Since meat consumption is often an indicator of the economic status of an individual, people with high social or economic status in the urban areas, tend to consume more meat and high quality meat products than rural areas dwellers. A similar situation to that observed for the consumption of milk and milk products. Nevertheless, per capita consumption of locally produced milk and dairy products is low in urban areas as a result of the perception that locally produced milk is not safe for consumption.

5.9 The degree of competitiveness

Recent ECOWAS legislation on the free movement of persons and goods, opened the door for market liberalization, including that of the meat and milk markets, thus exposing a non-competitive livestock and livestock products value chains to a stiff competition from imported products. The poor competitiveness stems from poor compliance with SPS agreements and the high costs of refrigeration and transportation. Within the region, Sahelian countries have an advantage through the live animal trade. This advantage nevertheless is eroded by administrative constraints encountered

during transportation, while imported meat and milk enter easily into the regional space. The consequence is that the local meat and dairy value chains are strongly disadvantaged vis-a-vis the imported products which come in with the benefit of export subsidies from their countries of origin. For example, in Senegal, the price of a litre of local milk is about \$ 1 - 1.2 US dollars, while the imported and reconstituted milk powder costs about \$ 0.5 US dollar/litre

5.10 Control over prices

The liberalization of the economy and trade within the ECOWAS region is characterised by livestock value chains stakeholders strongly fixing the product price. Prices in the market place are determined by bargaining, with the buyer relying on physical appraisal of the animal. Auctioning is not practiced and there is some resistance to setting price based on live weight. Traders apparently prefer the bargain approach. Wide fluctuations in prices occur between market days, that is why producers and traders are quite prepared to hold over stock of livestock for some days or weeks until they get an acceptable price. Prices are largely determined by opportunities and forces of demand and supply, with no government control.

5.11 Wholesale and retail distribution

Livestock/meat: Livestock traders from large towns usually buy animals from secondary markets and transport them to capital cities such as Freetown, Bissau, Abidjan, Lome, Cotonou, Lagos, Accra, and Banjul, where they sell to butchers or other customers for higher prices. They usually have financial resources that enable them to aggregate cattle/small ruminants from different parts of the country and even from neighbouring countries. Meat wholesalers usually have cold storage facilities for aggregating imported meat before distribution for sale. The major market segments for distributing meat to consumers are abattoirs, supermarkets, butcheries and other retail outlets. Retail butchers obtain their products mainly from met wholesalers and semi-wholesalers.

Milk and milk products: In the informal milk market sector, middlemen buy directly from the production centres for sale to retailers, who then sell to customers. Traditional milk producers sell both raw and sour milk to individual customers, milk collectors (mobile/itinerant traders) and mini dairies. Milk collectors usually sell raw and sour milk to retailers who sell directly to consumers, and they provide a vital link between the markets and smallholder producers in areas with poor market access. Vendors sell dairy products along the main roads, open spaces in car parks or in market places. In the formal milk markets value added products, including both local and imported dairy products are sold in the formal markets, i.e., supermarkets, mini markets and other outlets. Marketed local products include locally fermented milk, yoghurt and pasteurized milk, whilst powdered milk, UHT milk, flavoured milk, condensed/evaporated milk, yoghurt, butter and cheese are imported by wholesalers.

5.12 International price trends

Livestock/meat: The price of beef increased between 2005 and 2012, in all major beef exporting countries (United States of America, Argentina, Brazil and Uruguay) from 40 per cent in USA to 140 per cent in Argentina. Recorded prices for beef in 2010 were \$ 4 516.7 and \$4 927 US dollars per

tonne respectively for beef from United States and Argentina. The observed increases resulted from a combination of: a decrease in production, and an increase in the cost of production in producer countries as a result of the global economic and financial crisis of 2006 and of the appreciation of the Brazilian currency (+ 9 per cent in relation to the Euro in 2010. The impacts in the ECOWAS region were an increase in the cost of imports, and a currency flight.

Unfortunately OECD forecast indicated that meat prices on the global market will remain high and may stabilize at a higher level during the period 2011-2020.

Milk and Milk Product: A high degree of price uncertainty is often noted on the international markets, particularly with weather related production problems in the key exporting countries, as this often affect exportable supplies. Prices are also influenced by the volume of milk products available on the international market and the general performance of the global economy (FAO, 2008).

The international flow of dairy products, measured by regrouping various products, will hardly increase in real terms during the decade of 2011-2020. We can expect that, even with these prices, incomes will rise sufficiently in the importing countries to stimulate the production in exporting countries that produce milk at low cost. Otherwise, the level of livelihood in West African countries may fall in addition to the currency losses.

5.13 Balance of trade

Livestock sector within the region is essentially based on exportation/importation of live animals. Trade exchange regarding meat and milk is insignificant. Livestock products are mainly imported from American, European and Asian countries. In 2011, the balance of trade for meat and milk for the region as a whole was negative at about 2.8 billion \$US (-2.02 billion \$US for milk importation and -731.52 million \$US for meat), and was due to poor intra-regional trading and poor livestock processing capacities.

Within the region, only Niger had a positive trade balance thanks to a positive live animal exportation which counteracted the negative milk and milk product importation. At the other extreme was Cote d'Ivoire which had the highest livestock, meat and milk trade balance of \$ 243.34 million US dollars (Table 28).

Table 28: ECOWAS Member States balance of trade of livestock product in 2011

Countries	Value of livestock/meat (million \$US)			Value of Dairy (million \$US)			Value of Import/Export and Balance (million \$US)		
	Import	Export	Balance	Import	Ex- port	Balance	Import	Export	Balance
Benin	157.9	0	-157.9	23.9	0	-23.9	181.8	0	-181.8
Burkina Faso	0	10.34	10.34	15	0	-15	15	10.34	-4.7
Cabo Verde	6.1	0	-6.1	33.73	0	-33.73	39.82	0	-39.82
Côte d'Ivoire	178.23	0	-178.23	65.12	0	-65.12	243.34	0	-243.34
Gambia	1.8	0	-1.8	7.7	0	-7.7	9.5	0	-9.5
Ghana	117.2	0	-117.25	1.5	0.02	-1.45	118.63	0.02	-118.62
Guinea	50.18	0.15	-50.03	38.15	0.55	-37.6	88.23	0.7	-87.53
Guinea Bissau	0.2	0	-0.2	6.68	0	-6.68	6.70	0	-6.70
Mali	0	24.5	24.5	35	0	-35	35	24.5	-9.5
Niger	0	40	40	31	0	-31	31	40	10
Nigeria	238	47	-191	1 685	55	-1630	1 923	102	-1 821
Senegal	48.9	3.9	-45	119.6	0	-119.6	168.5	3.9	-164.6
Sierra Leone	48	0	-48	0	0	0	48	0	-48
Togo	10.9	0	-10.9	7.9	0	-7.9	18.8	0	-18.8
ECOWAS	857.41	125.89	-731.52	2 070.28	55.57	-2 014.71	2 927.32	171.12	-2 756.2

Source: Field data compiled by the consultant from national consultants' reports (2013)

5.14 Current and potential competitors

Within the ECOWAS region, Sahelian countries have a comparative advantage regarding the live-stock/meat and dairy value chains in comparison to coastal countries.

At the international level, countries outside Africa remain the biggest competitors with Europe taking the lead, followed by America and Asia for milk and dairy products thanks to a large measure to agricultural subsidy policies. The main imported products are those with long shelf life (milk powder, concentrated milk, UHT milk, cheese, butter.) Importation of these products will continue as the current national and aggregated regional production levels, cannot meet both the product range and quantity demand of the consumers, fuelled mainly the growing urban population and the hotel and hospitality industry. Products from both value chains vis-à-vis imported products are not competitive in terms of price, quality and product range. For these products, the current and potential countries competitors are Brazil, Argentina, United States of America, and European Union countries.

6. GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS

Ministries in charge of Livestock led the process of institutional support and arrangements for the development of the livestock sector and livestock value chains for which the production component is dominated by the small-scale producers who are responsible of about 90 per cent of the production. In addition to the Ministries and small-scale producers, many public and private stakeholders are also involved in the governance of the livestock and milk value chains. Generally, livestock production in the majority of ECOWAS Member States remains at a subsistent level, with limited market-orientation and poor institutional arrangements and support (insufficient budget, insufficient number of trained and qualified staff, and low level of investment for the development of required infrastructure for production, processing and marketing, weak research and extension institutions) in spite of its key socio-economic importance.

6.1 Organization and interactions among the different value chain stakeholders in vertical integration processes (synergies, actual or potential conflicts etc.)

In reality, livestock commercialization stakeholders are organized as a network at country and regional levels. These informal and formal networks comprise producers, collectors, traders, merchants' importers and exporters of livestock and livestock products, transporters, middlemen and butchers. The collectors provide a vital link between the markets and smallholder producers and vendors. The various operations in the supply chain from producer to the collectors to the vendors are based on trust and mutual understanding. The organization of stakeholders into associations, unions, federations, groupings of economic interest, cooperatives (butchers, urban and peri urban farmers, livestock traders) in different countries according to the activity/component of the value chain has as objective to favour the development of interactions and synergies, and reduce conflicts of interest among the various stakeholder groups

The main obstacles at national and regional levels are: i) poor circulation and exchange of information as the majority of the countries do not have Livestock Market Information Systems. ii) different national currencies, iii) a lack of specialization of stakeholders who assume different roles operating at the same time as producers, input suppliers, traders, butchers, etc. and iv) harassment by police and customs officers.

6.2 Existence of associations/cooperatives and their strengths

There are more than 150 national organizations of livestock, meat and milk value chains stakeholders grouped as: unions, federations, cooperatives and associations in the ECOWAS region (annex Table 7). These organizations are governed by the laws and other administrative texts that are apparently not adapted to the present socio-economic context. In addition to direct stakeholders organisations (annex Table 8), suppliers and services providers are often organised according to their common activities like: importers of veterinary products and animal genetic material (semen), Veterinary Clinics and consulting Services, Feed manufacturers like "Grands Moulins du Mali", "Usine Aliment Bétail du Niger", Banks & Microfinance Institutions and projects.

Regional organizations also exist like the Association of skins and leather producers. The Strengths of such producers' organizations /farmer organizations reside on: i) their legal existence as they are often created based on national laws, or decrees, ii) political recognition by governments and iii) social involvement at local level. Their weakness include: poor governance, limited funding and financial resources, poor leadership skills for resource mobilization, advocacy and lobbying, poor and limited communication systems, limited programmes on the ground, lack of operational secretariats, high illiteracy levels among the membership, lack of collaboration and linkages with similar organizations, low level of commitment and ownership by members, a lack of strategic plans and programmes in spite of government commitment and support towards the achievement of their goals and objectives.

6.3 NGOs acting in support to the value chain

The NGO (Veterinarians without Borders or Billital Maroobe, Miyetti Allah.) provide support through training on improved management, micro-credit, improved breeds, animal fattening (sheep and cattle), as well as and supporting vaccinations for disease prevention among others (annex Table 8). They generally support both men and women while some concentrate on the vulnerable segment of the society. In addition to NGOs, various bilateral and multilateral development partners support the livestock sector and include organizations such as FAO, UNDP, IFAD, Europe Union, USAID, AU-IBAR, ECOWAS, World Bank group, and a host of bilateral Cooperation partners.

7. NATIONAL OR REGIONAL PROJECT FROM WHICH THE VALUE CHAINS BENEFIT

7.1 Current national projects and programmes which benefit livestock/meat and dairy value chains

According to the data compiled from the national reports, the total amount of current (2013) projects for livestock development in West Africa was about \$ 812.007 million US dollars (annex Table 9). In Sahelian countries like Mali, Burkina Faso and Niger the costs for the current projects and programmes are respectively about \$ 309, 217 and 135 million US dollars. Guinea and Guinea Bissau have no on-going projects and programmes on livestock development. In Cabo Verde, Ghana and Nigeria, cost data on on-going projects and programmes are not available.

7.2 Current regional projects and programmes which benefit livestock/meat and dairy value chains

The focus of the current regional projects and programmes are on veterinary services governance, natural resources management and conservation, animal health, and livestock/value chain development (annex Table 10):

Veterinary services governance. Two on-going projects – the OIE/PNSV and Reinforcing veterinary governance in Africa programmes (Vet-Gov.) funded by Europe Union and AU-IBAR and implemented by AU-IBAR, FAO and OIE.

Natural resources management and conservation

Sustainable Dry land management systems at the livestock/wildlife interface project in Burkina Faso and Kenya pilot phase followed by Livestock for livelihoods programmes in Benin, Burkina Faso, Niger Mali, Guinea, Senegal, Chad, Nigeria Cameroon, Kenya, South Sudan, and Uganda PROGEBA in Ghana, Gambia, Mali, Senegal and GUINEA;

Animal health.

Two projects on Trypanosomiasis and Tse-Tse control in Africa and one on Trans-boundary Animal Diseases control (RAF 5057) project funded by IAEA. Recently, a major project on animal health was implemented by AU-IBAR on behalf of Members States: Vaccines for the Control of Neglected Animal Diseases in Africa (VACNADA) project funded by the EU

Value chain development:

Seven projects are currently being implemented in the region. These projects are focused on trade, genetic improvement skins and leather processing, milk production and processing, livestock development. The main partners are USAID, IDA/ WB, Belgium cooperation, CRDI/Canada and BID

8. POLICIES AND STRATEGIES

8.1 Natural resource policies

8.1.1 National natural resource policies

The exploitation and management of natural resources are governed by national policies and strategies of Member States. These policies fall generally into the framework of water and environmental protection, agricultural development and food security. However, these strategies and policies vary by country (annex Table 11). Policies on degraded land protection and management, creation and management of watering points, and on grazing areas in pastoral and agro pastoral zone have impacts on livestock feeding and meat and milk production. These policies are based on the laws, regulations and strategic documents and revolve around local authorities and land management (Benin, Burkina Faso, Niger, and Burkina Faso)

- Rural Code and Land Tenure (Benin, Niger)
- Rural and agricultural development (Benin , Guinea Bissau , Niger)
- Management and protection of forests and wetlands (Burkina Faso, Cote d'Ivoire, Mali)
- Water and Sanitation policies (Burkina Faso, Guinea , Mali, Niger)
- Protection of the Environment (Benin , Burkina Faso, Niger, Sierra Leone)
- Protection for Animal Health (Ghana, Mali , Niger, Burkina Faso, Benin, Senegal)
- Transhumance, pastoral development and natural resources management (Guinea, Mali, Niger, Senegal)
- Livestock Development policies (Guinea Bissau , Niger , Togo , Senegal)
- Food Safety strategy (Burkina Faso, Guinea Bissau, Senegal, Sierra Leone, Togo)

All these policies target the improvement livestock feeding and production which would increase livestock products supply.

8.1.2 Regional natural resource policies

At regional level, several treaties, decisions and regulations have been adopted with the goal of protecting and facilitating the development of livestock in the physical and political context of the ECOWAS region. The main policy documents are.

The ECOWAS Agriculture Policy and its plan of livestock transformation and development through the value chain development,

Treaties and Regulations on Transhumance designed to facilitate animal movement and access to good forage in the ECOWAS region and to avoid conflicts around natural resources exploitation in the coastal countries which receive the major part of Sahelian livestock during the dry season.

Decision C/DEC. 8/6/89 relative to the adoption of the ECOWAS support programmes on animal's disease control and *Regulation C/REG 21/11/10* on the harmonization of the structural framework and operational rules pertaining to the safety of plants, animals and foods in the ECOWAS region.

THE Objective of this regulation is to establish the general principles as well as the provisions and organizational processes to ensure the plant and animal health as well as food safety, at the community and national levels. It makes provision for the development of structures and cooperative mechanisms in the area of plant and animal health and food safety within the ECOWAS region.

8.2 Incentives or disincentives measures to producers and consumers

The free movement of people and goods within the ECOWAS region, the globalization of economies and the liberalization of international trade are the strong principles that govern business development. These principles at the same time could be held responsible for slow pace of the development of the livestock sector and hence of its competitiveness. The massive importation of red meat and frozen poultry, milk and milk products of dubious quality to human health in order to meet national demand remains problematic. In order to mitigate the negative effects of globalization, ECOWAS Member States took measures to promote the development of the livestock / meat and local milk chain. The main incentives measures taken by ECOWAS countries for livestock production and consumption are.

Securing local production

Creating a national fund for Livestock Development in Mali, Niger, Burkina Faso to support production, processing and marketing of livestock (facilitate access to credit and subsidy)

Provision of subsidized farming materials and equipment for production, transport, packaging and processing

Creating centres of genetic selection and multiplication of high yielding breeds (Niger, Mali, Burkina, Cote d'Ivoire, Togo)

Provision of semen for artificial insemination: cross breeding (local x exotic breeds) for improving meat and milk production,

Creation of national security reserve for livestock feed and construction of livestock feed stores (Niger, Burkina Faso),

Range management and programmes for the promotion of pastoral systems (Mali, Niger, Burkina Faso),

The development and implementation of projects and programmes at national and regional levels: i.e. The Agribusiness and Trade Promotion project (ATP - West Africa) and West Africa Agricultural Productivity Programme (WAAPP -ECOWAS), Project of Exportation of Agro pastoral products (PRODEX-Niger), Healthy Milk for the Sahel (Mali)

The development of capacity building strategies for livestock value chains stakeholders in Niger and The Gambia

Tax measures in favor of the livestock sector

The establishment and implementation since 2000 of the Common External Tariff (CET/TEC) of the WAEMU (excluding VAT) set at 5 per cent for milk and 15 to 20 per cent for dairy products does

not appear sufficient to improve the competitiveness of the locally produced milk. These rates are low and weak in comparison with the subsidies for Western countries producers. The CET provides for an exemption of trade between the WAEMU Member States and set the rates applicable to products imported from third countries as import duties.

Introduction of compensatory levies on meat imported from outside of Africa (Cote d'Ivoire),
The abolition of the tax at the border and within the country on animals transported by truck or train in Cote d'Ivoire in 2011) is likely to facilitate livestock cross-border trade

Low interest rate for loans (up to 10 per cent) by the Support project of the Development of Livestock in Côte d'Ivoire,

Incentive measures for processing and marketing

In many countries the importation of construction materials and equipment for the construction of processing units of livestock products are tax-exempt (Burkina Faso, Niger, and Nigeria),

In Cote d'Ivoire, the disengagement of government from running any component of the value chain (production, marketing, processing and distribution) and increasing support to farmers, private sector operators and professional organizations to take up the slack

Investment and Export Promotion facilities measure in Gambia in 2010 by the establishment of the Gambian Investment and Export Promotion Agency (GIEPA),

Investment incentives for export oriented livestock enterprises

Health Measures

Organization of immunization against major Trans-boundary Animal Diseases,

Prohibition of transportation and marketing of pigs from areas where outbreaks of the African Swine Fever (ASF) were confirmed to other areas;

Implementation of the recommendations on the evaluation of the Performance of Veterinary Service (PVS) organized by the OIE

Implementation of the PAN-SPSO in ECOWAS members' states

Disincentives Measures

The suppression of clandestine slaughtering and sale of prohibited products are measures promoted by consumers but which discourage butchers,

Changing transhumance period to December –January is welcomed by the farmers but unappreciated by herders,

Prohibition of wandering livestock during periods of culture

8.3 Credit policies

There is no official access to credit policy document for the livestock sector in ECOWAS region and in several ECOWAS Members States. To plug this gap, many countries such as Burkina Faso, Cote d'Ivoire, The Gambia, Ghana, Niger and Nigeria created national institutions for granting credits. Despite all these efforts direct access to credit is very limited for value chain actors who do not

have sufficient security/collateral to cover the loan. In Cabo Verde, Benin, Togo, Guinea, Guinea Bissau, the policy of credit for livestock sector is yet to be formulated and implemented. The principal providers of finance are the commercial banks and micro-finance institutions which because of their high interest rates, are not preferential sources of finance for milk and meat production entrepreneurs. Nevertheless, some credit facilities exist in some development projects such as the value chain development programme in Benin where the rate of interest is about 5 to 10 per cent against 14 to 24 per cent in Commercial banks.

8.4 International trade policies

The International Trade policy is an instrument for economic growth and poverty reduction. The vision of ECOWAS is aligned with a free exchange space between countries.

Several countries elaborated some sectorial policies and signed agreements and specific commercial conventions such as: (i) African Growth and Opportunity Act (AGOA) with the United States, (ii) the Cotonou agreement with the European Union, (iii) Agreement on the application of the Sanitary and Phyto Sanitary measures, (iv) Agreement on the technical obstacles to the trade, (v) generalized system of commercial preferences of States.

8.5 Acts, regulations and laws governing the value chain

8.5.1 Acts, regulations and laws governing the value chain in ECOWAS

There are no specific regulations on livestock, meat and dairy values chains in the ECOWAS region. Currently adopted texts (protocols, acts, decisions, instructions and regulations have a general vision on livestock development but could have an indirect effect on value chains component. Examples of such texts that could have an indirect positive impact on livestock chain components by addressing the issues of access to good pasture, free movement of livestock considered as goods, and the reduction of trans-border control of livestock being transported for marketing are listed below.

- Decision C/DEC. 8/6/89 relative to the adoption of the ECOWAS support programme on animal's disease control.
- Directive n°08/2005/CM/WAEMU in date of 12th December 2005 relative to the reduction of points of control on inter - states road axes of WAEMU
- Directive n° 05/99/CM/WAEMU of 6th August 1999 carrying adoption of the Regional Special Programme for food security in the WAEMU Members States
- Directive n° 07 / 2006 / CM / WAEMU of 23rd March 2006 relative to the Veterinary Pharmacy;
- Directive n° 01 / 2012 / CM / WAEMU of 10th May 2012 relative to the free circulation and the establishment within the union of Veterinaries Doctors of the WAEMU Members States
- Regulation n°01 / 2006 / CM / WAEMU of 23rd March 2006 on the creation and modes of functioning of a veterinary council within the WAEMU
- Regulation n°02 / 2006 / CM / WAEMU of 23rd March 2006 establishing some appropriate communal procedures for the authorization on the market and the veterinary medicine surveillance and instituting a regional committee on veterinary medicine

- Regulation n°03 / 2006 / CM / WAEMU of 23rd March 2006 instituting royalties in the veterinary medicine domain within the WAEMU.
- Regulation n°07 / 2007 / CM / WAEMU of 6th April 2007 relative to the sanitary Security of plants, animals and foods in the WAEMU.
- Regulation C/REG 21/11/10 on the harmonization of the structural framework and operational rules pertaining to plants and animals health and food safety in the ECOWAS region adopted at the 62nd Session of the Council of Ministers held in Abuja in June 2009. The object of this regulation is to establish the general principles as well as the provisions and organizational processes to ensure healthy plants and animals as well as food safety, at the community and national levels. It shall institute the structures and mechanisms of cooperation in the area of health and food safety within the ECOWAS region.
- Directive C/DIR.1/11/10 relative to the ECOWAS veterinary pharmacy adopted by the 65th session of Ministers conference held in Abuja on 25-26 November 2010. That Directive specified conditions for the authorization of veterinary drugs importation and exportation, circulation/distribution, commercialization and industrial preparation within the ECOWAS area.
- Regulation C/REG.22/11/10 relative to veterinary drugs management within the ECOWAS sub region adopted by the 65th ordinary session of the Council of the Ministers held in Abuja on 25-26 November 2010.
- Regulation C/REG.23/11/10 relative to the creation and modality of functioning of the Regional veterinary Committee within the ECOWAS sub region adopted by the 65th ordinary session of the Council of the Ministers held in Abuja on 25-26 November 2010. The objective of the installation of this consultative committee is to provide technical advice and recommendations for the formulation and harmonisation of legislative texts relative to animal health and animal wellbeing, animal product food security, veterinary pharmacy, zoonosis and veterinary profession.

Treaties and regulations on Transhumance. To facilitate animal movement in the region, the 21st ordinary session of the heads of States Conference held in Abuja on 30-31 October 1998, took Decision/DÈC.S/IO/98 relative to the regulation of the transhumance between ECOWAS Members States. That decision: (i) defined different concepts in relation of the transhumance, (ii) specified the principles of the transhumance, (iii) defined the area of application of the term transhumance, (iv) specified the conditions of livestock movement, (v) defined the ratio of transhumant animals per herder and (vi) defined the modality of acceptance of animals in transhumance in Members States. The Heads of States Conference on the transhumance treaty was followed by the 49th session of Ministers who adopted regulation C/REG.3/01/03 relative to the implementation of conditions for transhumance between ECOWAS Member States. However, poor sensitization of different stakeholders on transhumance in the major ECOWAS Member States kept livestock movement throughout region very difficult and this resulted in many conflicts around natural resources exploitation in the coastal countries which received the major part of Sahel livestock during the dry season.

The ECOWAS Agriculture Policy (ECOWAP)

The regional agricultural policy for West Africa (ECOWAP) is a response to agricultural and food issues in West Africa. It is the outcome of detailed assessments of the agricultural sector across the

region including strengths and weaknesses, related food security issues, food crises and other challenges confronting the sector. These assessments underpinned the formulation of a comprehensive strategy to overcome these weaknesses, challenges and crises. The global objective of the Regional Agricultural Policy adopted by ECOWAS Member States contributes in a sustainable way to: meeting the food needs of the population, its economic and social development; the reduction of poverty in the Member States, and thus to reduce existing inequalities among territories, zones and nations.

This global objective is broken down into seven specific objectives focusing on: food security for people in the region; reducing food dependence and achieving food sovereignty; involving producers in markets; creating jobs with guaranteed incomes in order to improve living conditions and services in rural areas; intensifying production systems in a sustainable manner; reducing the vulnerability of West African economies by limiting factors of instability and regional insecurity; and adopting appropriate funding mechanisms. Following the adoption of ECOWAP and its harmonization with NEPAD'S agricultural programme in 2005, the ECOWAS Commission was mandated to develop an action plan for the development and transformation of livestock farming for the region.

The objective of the action plan is to bring about the economic transformation of the meat and dairy sectors, in the region so as to achieve sustainable food security, poverty reduction and provide reasonable income to those in the livestock sector, without endangering natural resources. Four strategic components were developed to address this objective.

- Creation of a favourable environment for the development of the livestock, meat and dairy sectors;
- Providing security for transnational movements and prevention of conflicts;
- Improvement of the livestock production sector;
- Promotion of livestock, meat and dairy sectors;

One of the first programmes developed to address these objectives was the "Promotion of strategic products for food sovereignty" and comprised the following livestock related activities designed to target the improvement of livestock, meat and milk value chains including:

- Management of herd movement between countries and the prevention/regulation of conflicts in the use of natural resources
- Restructuring and organization of marketing channels or value chains and
- Promotion of processing and value addition to products.

8.5.2 Acts, regulations and laws governing the value chain in ECOWAS members' States

Acts and regulations governing seven value chain areas shown in Table 29 were adopted and are being implemented by Member States. The texts on the governance and stakeholders' organizations were adopted by about 71 per cent of Member States, while another 36 per cent adopted acts and regulations on land tenure and rural codes, territorial administration code and livestock strategic/policies and 29 per cent committed to pastoral codes and genetic resource improvement. Annex Table 12 presents details of the Acts, regulations and laws adopted for governing and supporting livestock value chains in region.

Table 29: Main domains of governance of value chains

Countries	Number of laws & decrees on livestock	Laws, Decrees, Acts on:							
		Land rural codes	& Pastoral codes	Collectivity codes	Livestock strategy/ policy	Genetic resources	Governance stakeholders organizations	& Health norms & trade	
Benin	2 laws	x		x		x	x	x	
Burkina Faso	16 laws 24 decrees	x	x		x	x	x	x	
Cabo Verde	2 laws -3 decrees							x	
Côte d'Ivoire	10 laws	x		x	x		x	x	
Gambia	6 acts						x	x	
Ghana	1 law				x	x	x	x	
Guinea	1 act, 3 codes/law		x	x	x			x	
Guinea Bissau	1 law						x	x	
Mali	8 laws-7 decrees	x	x	x			x	x	
Niger	11 laws	x	x	x	x	x	x	x	
Nigeria	12 decrees & acts						x	x	
Senegal	1 law						x	x	
Sierra Leone	1 act							x	
Togo	3 law							x	
Frequency		5	4	5	5	4	10	14	
Per centage		36	29	36	36	29	71	100	

9. CONSTRAINTS AFFECTING MEAT AND MILK VALUE CHAINS AND PROPOSED SOLUTIONS

There are many constraints impeding various components of the livestock value chain and slowing down its development. Some of these are shown under weaknesses in Tables 30 and 31, and further described under section 9.1

Table 30: Livestock meat value chain SWOT analysis

Component	Strength	Weakness	Opportunities	Threats
Input supply	Existence of vaccines manufactured locally; Veterinary drugs and vaccines accessible in large towns; Existence of animal feed ingredients Strong demand	Lack of capital to invest in widespread distribution of veterinary drugs Animal genetics Animal feed shortage	Equipment, breeding animals, drug import facilities Policy promoting value chains development	Wild fire Fake drugs Drought in Sahel
Production	Indigenous skills of herdsmen Existence of grazing area. Large herds of local livestock breeds Domestic demand	- Limited equity capital and poor access to credit facilities; - Production techniques in ruminant production are largely rudimentary; - Limited capacity of owners to seek market-related information	Increasing demand for meat Policy encouraging value chain promotion	- Changing land use policies; - Conflicts between livestock herdsmen and crop farmers - Drought in Sahel
Marketing	Existence of traders of livestock and meat Existence of livestock Good finance capacity of some actors	Poor transport facilities for live animals and meat. Insufficient modern livestock markets Lack of information on livestock markets Dilapidated slaughterhouses and meat shops Weak access to credit	Increasing consumer demand Political support for livestock marketing	Increased importation of cheaper livestock and meat Lack of funds for livestock market rehabilitation and construction Limited access to funds and credit
Processing	Availability of livestock and meat Equipment for small scale operation may not be too difficult to acquire. Existence of traditional skills for meat processing Existence of market	Lack of modern knowledge of meat processing techniques Limited access to credit	Increasing demand for raw and processed meat Potential for government support for improved meat processing	Lack of regulations on processing Lack of capital to invest in appropriate and required equipment

	for processed meat			
Consumers	Increasing of urban population and a growing middle class	Poor differentiation and costing of high and low quality meat parts Poor knowledge of best meat usage practices	Large proportion of the population consumes meat	Falling household incomes
Institutional	Dairy Farms have expertise in artificial insemination (AI).	Lack of awareness and sensitization Low livestock performance Lack of livestock statistics	Sensitized Ministries in charge of Livestock	Lack of funds

Table 31: Livestock milk value chain SWOT analysis

Component	Strength	Weakness	Opportunities	Threats
Input supply	Locally manufactured vaccines Veterinary drugs and vaccines are accessible in big towns; Animal feed available in the zone	Lack of capital to invest in widespread distribution of veterinary drugs	Elimination of import duties on imported feed ingredients, equipment, breeding animals, and vet drugs	Wild fire may destroy crop residues left on fields for livestock use Introduction of fake drugs
Production	Local knowledge for cattle production Availability of grazing land. Existence of local breed with high potential	Poor milk handling techniques of herds-men Lack of effective farmer based associations Seasonality of production performance Shortage of animal feed during the dry season	High demand of milk and milk products; Well established research and extension services	Changing land use policies; Conflicts between livestock herds-men and crop farmers; Outbreak of TAD and zoonosis
Marketing	Fresh milk and milk products sellers and entrepreneurs. Large scale milk and milk products importers Local industrial and semi industrial Milk and milk products distributors	Lack of equipment for transporting and storing fresh milk;	High demand of milk and existence of policy for improving milk production	Poor access roads to farms makes it difficult to transport fresh milk speedily to reduce deterioration and spoilage
Processing	Equipment for small scale processing	Knowledge of milk processing techniques is quite poor.	High demand of milk and milk products	Cheaper imports of powdered milk

Organisation & Governance	Existence of model of NGO and farmers organization and specialized associations in some segments of value chains	Unfair contractual arrangements between owners and herdsmen may be a disincentive for owners to invest in milk yield improving technologies.	NGO and Government promote the enhancement of stakeholders' organizations capacities	Inadequate financing for capacity development of stakeholders' organizations
Institutional	Policy engagement Existence of Directorate of livestock value chain, Existence of milk processing units	No organization of regular livestock census; Skilled technicians and logistics for effective A.I. are often not available at designated A.I. centres.	Producers and consumers encourage local production	Local producers not sufficiently protected from foreign competition.

9.1 Constraints and bottlenecks of livestock/meat and milk value chains

- The major constraints requiring policy interventions are:
- Inadequate watering points facilities and limited availability of good quality and affordable animal feed,
- Persistence of some animal diseases (CBPP, PPR, ASF)
- Weakness of agricultural research and extension services
- Poor breeding stock
- Poor storage and processing facilities for milk and meat
- A lack of marketing infrastructure (market, abattoirs) and equipment of transport
- Lack of capacity to enforce legislation, norms, decision and regulation,
- A lack of livestock statistics
- Poor access to credit facilities,
- Poorly organized professional organizations and other stakeholders

The main bottlenecks or constraints to the development of livestock/meat and milk value chains are as follows:

Primary production constraints

- Land ownership: Insecurity of tenure/ conflicts due to the competition between agriculture and livestock on natural resources exploitation
- Animal feed shortages and lack of subsidies for animal feed, high cost of animal feed and persistence of traditional system of production characterised by transhumance, lack of housing in rural areas, lack of feed supplementation (low availability in agro-industrial by-products), and effect of climate change
- Insufficiency of modern units of animal feed production and high cost of inputs for animal feed manufacturing.
- Low productivity of the local breed and seasonality of milk production
- Minimal investments in required infrastructure and equipment such as (watering points, grazing routes vaccination parks etc.)

- Lack of capital to invest in widespread distribution of veterinary drugs and persistence of infectious diseases (Contagious Bovine Peripneumonia, Blackleg, Peste des Petits Ruminants, Anthrax, Pasteurellosis, Africa Swine Fever, Trypanosomiasis.)
- Institutional weakness of producers' organizations
- Lack of credit/insurance facilities
- Lack of reliable statistics: for the analysis of production and productivity of the national herds.

Institutional and socio economic constraints

- Absence of a defined policy on livestock, meat and milk value chains development,
- Minimal involvement of stakeholders in the formulation of dairy policies and development of the livestock / meat value chain.
- Lack of policy initiatives to support production input subsidies,
- Inadequate budget allocated to livestock sector and high dependency on donor funds,
- Weak enforcement at the national and sub-regional levels of the Decision A/DEC.5/10/98 of 31st October 1998 regulating the transhumance between ECOWAS member states,
- Lack of appropriate policies and legal frameworks, including local conventions, for the protection and management of grazing lands, cattle tracks and watering points,
- The natural resource policy is silent in general on the issue of animal genetic resource conservation and the use of exotic pure breeds and their crosses,
- Lack of dedicated departments responsible for the delivery of livestock services, particularly animal health services in some countries and weak and ineffective departments in others
- Lack of conducive policies for promotion and support of the private sector
- Difficulty in implementing veterinary legislations and international norms, regional decisions, treaties and regulations
- Bureaucracy and multitude informal barrier/taxes to livestock and meat commercialization (harassment by police and customs officers demanding money)
- Lack of relevant statistical data as responsible Ministries Departments and Agencies not funded to carry out regular livestock census

9.2 Proposed solutions

Based on the analysis of the current situation of the livestock /meat and milk value chains, the proposed solutions cover policy initiatives and programmes which can improve the development, availability and accessibility of livestock products. These actions will require the intensification and diversification of meat production and a modernization of the dairy sector.

Suggested policies for smooth operation of livestock/meat and milk value chains

- Development of pastoral infrastructure and equipment (Watering points, vaccination crushes, migratory routes)
- Intensification and diversification of livestock production including inputs subsidies (e.g. for semen procurement and for the animal feed industry)
- Protection of local producers from unfair external competition e.g. by: (i) instituting a tariff regulation mechanism on imported livestock products (ii) increasing and implementation of the ECOWAS External Tariff of 35 per cent of CIF and (iii) taking policy measures to enhance fair competition between local and imported livestock and livestock products

- Improvement of livestock marketing and processing infrastructure and equipment (livestock markets, abattoirs, meat and milk processing facilities) and respect of SPS norms, legislative and regional texts on (i) bio-security along both value chains and in particular for primary production and processing (adequate abattoirs, meat storage and processing units, milk storage and processing units, equipment for livestock, meat and milk transport norms and facility and (ii) removal of non-tariff barriers in ECOWAS zone
- Financial support for the development of the value chains by: (i) supporting public private sector partnerships, (ii) establishment of livestock development funds, (iii) support for the creation of Marketing Information Systems, (iv) facilitating the emergence of new classes of livestock sector entrepreneurs, (v) facilitating access to credit for value chains actors for the development of animal feed production
- Enabling research and extensions services to fully engage in local breeds characterization, genetic improvement and control of TADs.
- Creating required conditions for the collection of livestock data and analyses, harmonization of livestock census methodology and livestock market information system, for the development of reliable livestock statistics
- Capacity building of actors: institution of mechanism of dialogue between actors (dialogue public – private dialogue, sensitization, conflict resolution), organisation and specialization of actors (in cooperatives, association, union, federation, inter professional according to the component of each value chain).
- Build capacity of specialized stakeholders associations and their members, and encourage dialogue and mutual strengthening so that they can provide quality services to the various value chains components.

According to the value chains, the suggested policies are as follows:

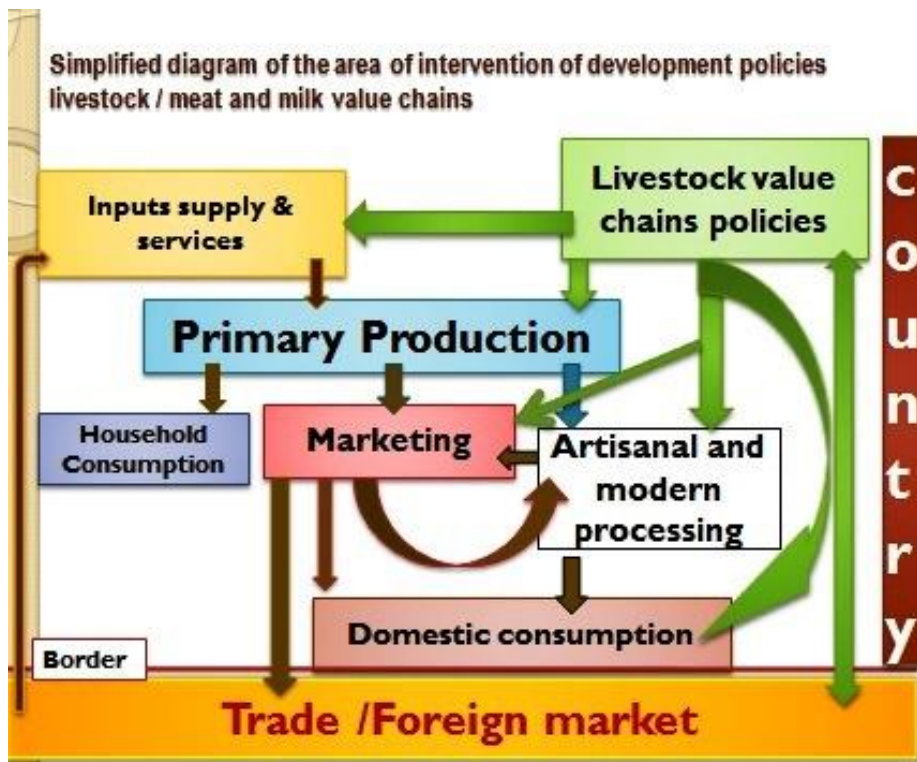
Policy for livestock meat value chain.

- Promotion of small scale livestock fattening programmes by business oriented entrepreneurs
- Feed preparation, storage and use which can play a key role in fattening animals,
- Capacity building on slaughter process including sanitary and hygienic aspects.
- Rehabilitation of slaughter houses and their cold storage
- Improvement of marketing infrastructure
- Improvement of livestock transportation
- Awareness creation of SPS regulations and ECOWAS international certificate.
- Specialization of value chain actors
- Removal of unnecessary barriers to trade and,
- Measures encouraging the development of local meat and milk production industries and protecting them from unfair competition from imported products.

Milk value chain: The areas for improvement include:

- Promotion of mini-dairies
- Feed preparation, storage and use,
- Genetic improvement through Artificial Insemination and other support services,
- Milk collection schemes under a cold chain coverage and,
- Organization of cooperatives

Figure 3: Required areas of policy interventions for livestock – meat and milk value chains



Creation of conditions to increase production and productivity

- Establishment of fodder storage remains a compelling solution to ensure feed security for livestock (harvest and conservation of natural forage, forage crop),
- Improvement of genetic potential of local livestock by crossing with improved breeds using artificial insemination
- Development of semi-intensive and intensive production systems
- Improved animal disease control programme,
- Creation and management of water points (pastoral wells, boreholes), night enclosures
- Construction of rural/pastoral roads,
- Establishment of information networks and data collection (statistics).

Promotion of livestock meat and milk processing

- Construction and rehabilitation of modern municipal slaughterhouse to improve safety and quality of meat
- Support for the establishment of meat processing units
- Support for the establishment of milk and cheese processing and storage units,
- Encourage the development of modern butchers trained in modern meat cut techniques, and use of cold chains
- Promote the creation of milk collection and processing centres

Creation of favourable marketing

- Construction and/or rehabilitation of livestock market,
- Organization of actors (traders, butchers, collectors, middlemen) and creation of a good network of distribution and marketing

- Promoting the uses of appropriate vehicles for transporting livestock and products such as milk and meat.

Organizations and specialization of actors

- Organizing of stakeholders by value chain components (producers, processors, traders, service providers)
- Encouraging the professionalization of the different stakeholders of the value chain and mutual interactions
- Strengthening the institutional and operational capacities of different stakeholders.

9.3 Prioritized areas of interventions

The prioritized areas are:

- Harmonization of livestock data collection and analysis for a reliable generation of statistical data and information (livestock census, System of information on livestock markets, data on biomass);
- Rehabilitation and construction of production infrastructure (watering points, vaccination crushes, rangeland demarcation, transhumance routes.);
- Support to producers to improve production and productivity including genetic improvement of local breeds, animal diseases control, access to credit, animal feed improvement, and various inputs supplies;
- Rehabilitation and/or construction of infrastructure and equipment for processing and marketing (abattoirs, livestock market, milk collection centres, milk processing units, specialized butchers houses);
- Definition and enforcement of national and regional policies on pastoral land management (laws and regulations on land tenure, transhumance), livestock products transportation (live animals, cold chain for meat and milk), livestock research (animal feed, local breed characterization) and extension of research results, livestock products packaging conservation and storage;
- Allocation of adequate budget and facilities for access to credit (creation of specialized bank, provision of low interest loans, creation of a livestock development fund)
- Organization and specialization of different actors along the value chain components and strengthening their capacity.
- Strengthening linkages between producers, veterinary services providers input suppliers /processors /and traders.

10. SUGGESTED PROJECTS AND PROGRAMMES BY ECOWAS MEMBER STATES

A total of 49 projects and programmes were proposed across the region for a total investment of \$ 2.602 billion US dollars (Table 32). Additional details on the programmes and investment costs by country are presented in annex Table I3. The investments cover genetic improvement, production, marketing and processing infrastructure and equipment.

Table 32: Suggested investment in livestock/meat and milk value chains in ECOWAS Member States

Countries	Project	Programmes	Budget (million \$US)
Benin	7	Support projects for ruminants and pig development, conservation of genetic resources and milk processing	191.85
Burkina Faso	9	Livestock value chains development –animal feed stock constitution & crop residue valorisation projects	651.00
Cabo Verde	5	Support Programme for livestock sector institutional strengthening & livestock improvement	2.72
Côte d'Ivoire	3	Strengthening livestock/meat value chain programme	16.35
Gambia	1	Support project for enhancing the meat value chain	109.94
Ghana	1	Support project for enhancing the Milk Value Chain	57.54
Guinea	3	Livestock, meat and milk value chains development projects	63.84
Guinea Bissau	5	Support programme for the development of value chains, livestock statistics and institutional strengthening	21.68
Mali	1	Promotion of livestock, meat and milk value chains development programme	169.53
Niger	2	Support programme for livestock, meat and milk value chain development	88.04
Nigeria	4	Livestock/meat and dairy development agenda projects:	691.74
Senegal	2	Programme for the development of local livestock, meat and milk production	407.00
Sierra Leone	2	Livestock improvement project	50.50
Togo	4	Support projects for development of livestock, meat and milk value chains and institutional development of stakeholders	80.68
ECOWAS	49		2 602.42

Source: Field data compiled from nationals consultants' reports (2013)

Suggested regional projects.

On the basis of priority project areas identified by Member States, and in order to contribute to meeting national demands for livestock and livestock products, the following six areas of intervention at the regional level are suggested:

- i) Livestock statistics improvement. The objective is to have reliable livestock statistics by using harmonized methods of data collection and analyses and organizing regular livestock census including the establishment of an information collection system on livestock markets and biomass production.
- ii) Livestock infrastructure and equipment development. The objective is to build sustainable facilities for livestock production and processing by constructing, developing or acquiring as appropriate, the following elements: watering points, modern livestock markets, modern slaughterhouses, range land and

transhumance routes demarcation (to reduce conflicts between herders and agriculturalist), animal feed manufacturing industries, vaccination parks (control of TADs), milk collection centres, infrastructure and equipment for transporting storing and processing meat and milk, and modern means of live animals transportation.

- iii) Local livestock breeds characterization and genetic improvement Genetic improvement is oriented to local breeds which have a potential high meat and milk production.
- iv) TADs control and surveillance (CBPP, PPR and African Swine Fever).
- v) Capacity building of value chains stakeholders' organisations. The objective of the programme is to contribute to the sensitization and specialization of value chain stakeholders and structuring them into viable organisations, with functional institutional and operational capacities (hygiene and biosecurity, lobbying and leadership).
- vi) Elaboration and implementation of policies: These should be capable of improving livestock/meat and milk value chains development, through the facilitation of access to credit, removal of informal barriers to livestock trading, and implementing favourable tax regimes that protect local products and industries from unfair external competition.

II. CONCLUSIONS

This review of livestock, meat and milk value chain and the policy influencing them in the ECOWAS region revealed that region is well endowed with a large population of livestock well adapted to the various ecological zones in the region. These animals especially cattle and small ruminants are to a large extent managed under the extensive pastoral (nomadic and transhumant) and agro-pastoral systems with a limited number being raised in urban peri-urban intensive systems, to produce meat and milk.

Although the sector is challenged by a variety of constraints it still contributes substantially to the demand for live animals, meat and milk in the region. The various constraints have been well described in this document, and potentially valuable solutions have been identified as well. None of the identified constraints to an improved performance of the triple (live animals, meat and milk) value chains is beyond control and can be alleviated and/or eliminated with the implementation of a right combination of research and policy interventions.

Each of the 5 components (production, processing, marketing, inputs supply and consumption.) of these value chains has its own peculiar constraining factors to which specific policy solutions could be applied. The constraints were clustered into 5 groups:

- Primary production constraints (Low productivity of local breeds, seasonal feed shortages, land use related conflicts, poor research and extension support etc.)
- Institutional and socio economic constraints (lack of reliable livestock statistics for informed decision making and policy formulation, inadequate enticement of the private sector, sector budgetary allocation not commensurate with its contribution to national economies)
- Processing and storage: Infrastructures and equipment constraints (poor infrastructure and equipment for products processing, low technical competence of processors)
- Marketing and transportation constraints (un-regulated pricing systems, poor market infrastructure and organization, inability to enforce policy on free movement of goods and persons)
- Stakeholders' organizational and capacity building constraints: (Weak organizational capacity and specialization of value chain stakeholders, poor synergy and coordination among value chain stakeholders, i.e. producers, processors, service providers, exporters and importers).

As indicated above, none of these constraints and bottle necks to improved performance is beyond control, and some policy interventions suggested for this purpose are inter alia.

- Removal of non-tariff barriers in the ECOWAS zone,
- Policy measures to enhance fair competition between local and extra-Africa imported livestock and livestock products
- Enabling measures for supporting public - private partnerships
- Establishment of livestock development funds
- Enabling research and extensions services
- Organization and empowerment of professional organizations along the value chains
- Enactment and enforcement of progressive land tenure, ownership and use regulation and laws
- Allocation of adequate budget to the sector in line with recent Heads of States and Governments' commitments and support to access to credit facilities for value chain stakeholders.

Since policies also have to be implemented within specific projects, programmes and initiatives, some effort was made to identify and cost promising initiatives. The implementation of these initiatives will significantly improve the performance of the various livestock, meat and milk value chains, increase the contribution of

the livestock sector to the demand for livestock and livestock products in the various Member States and positively impact on national economic growth and development.

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13. ANNEX

Annex Table 1: Physical flow of cattle in 2011

Countries	Total cattle population	Off-take		Slaughter		Import/Export	
		Number	Rate	Number	Rate	Export	Import
Benin	2 058 000	204 651	9.9	69 365	3.4	135 286	116 924
Burkina Faso	8 566 448	1 113 638	13.0	741 765	67.0	371 873	158
Cabo Verde	22 652	1 925	8.5	dna	dna	dna	dna
Côte d'Ivoire	1 582 652	189 918	12.0	178 944	11.0	dna	169 131
Gambia	398 472	47 418	11.9	47 418	11.9	dna	dna
Ghana	1 498 000	269 680	18.0	220 446	82.0	dna	22 191
Guinea	5 174 939	118 411	2.0	88 118	74.0	4 000	dna
Guinea Bissau	1 325 412	dna	dna	14 345	dna	dna	dna
Mali	9 438 182	1 160 896	11.0	315 644	27.0	200 235	dna
Niger	9 552 611	1 337 360	14.0	476 420	35.6	465 595	dna
Nigeria	18 871 399	2 108 904	11.2	3 513 480	18.6	57 818	232 570
Senegal	3 346 000	337 697	10.1	430 697	12.9	8 000	101 000
Sierra Leone ¹³	517 000	16 000	3.1	28 800	5.5	dna	12 800
Togo	313 269	dna	dna	dna	dna	dna	30 000
ECOWAS	62 665 036	6 906 498	10.4	6 125 442	31.7	1 242 807	684 774

NB: The percentage for slaughter is for the controlled slaughter. Clandestine and household auto consumption are not recorded.

Annex Table 2: Physical flow of sheep in 2011

Countries	National stock	Exploitation		Slaughter		Export /import	
		Number	Rate	Number	Rate	Export	Import
Benin	825 000	54 900	6.7	49 520	6.0	5 380	62 242
Burkina Faso	8 490 513	2 207 533	26.0	1 621 451	73.5	586 082	200
Cabo Verde	11321	3396	30.0	dna	dna	dna	dna
Côte d'Ivoire	1 700 303	425 076	25.0	875 530	206.0	dna	190 215
Gambia	143 939	32 098	22.3	32 098	100.0	dna	dna
Ghana	3 887 000	104 949	27.0	90 656	86.4	dna	80 000
Guinea	1 722 729	85 907	5.0	3 039	4.0	dna	dna
Guinea Bissau	304 745	dna	dna	3840	dna	dna	dna
Mali	12 458 522	868 778	34.0	374 585	20.0	510 888	dna
Niger	10 018 860	2 204 149	22.0	779 465	29.9	990 245	dna
Nigeria	37 422 252	6 268 332	17.0	4 164 566	11.0	92 832	670 212
Senegal	5 700 000	1 435 924	25.1	1 838 541	128.0	dna	402 617
Sierra Leone	682 000	102 300	15.0	107 415	15.8	dna	5 115
Togo	1 750 671	dna	dna	dna	dna	dna	40 000
ECOWAS	85 117 855	13 793 342	21.3	9 940 706	56.7	2 185 427	1 370 601

Source: Data compiled from national consultants reports

NB: In Cote d'Ivoire the high percentage is due to livestock importation

¹³Sierra Leone MAFFS (2008) reported livestock population estimation

Annex Table 3: Physical flow of goats in 2011

Countries	National stock	Exploitation		Slaughtering		Export/Import	
		Number	Rate	Number	Rate	Export	Import
Benin	1 640 000	101 217	6.2	96 763	5.9	4 454	58 735
Burkina Faso	12 712 705	4 068 066	32.0	3 323 284	82.0	744 782	dna
Cabo Verde	179 676	53 903	30.0	dna	dna	dna	dna
Côte d'Ivoire	1 331 687	332 922	25.0	379 911	dna	dna	46 989
Gambia	302 878	76 022	25.1	76 022	25.1	dna	dna
Ghana	5 137 000	148 973	29.0	140 914	94.6	dna	72 543
Guinea	2 060 664	73 074	4.0	8 459	12.0	dna	dna
Guinea Bissau	649 084	dna	dna	8 307	dna	dna	dna
Mali	17 348 576	3 296 229	34.0	658 793	20.0	28 776	dna
Niger	13 231 430	4 234 058	32.0	3 448 267	81.4	1 006 663	43.6
Nigeria	65 651 252	15 133 128	23.0	108 238 670	165.0	5 581	589 475
Senegal	4 880 000	1 664 196	34.1	1 664 196	34.1	dna	dna
Sierra Leone	803 000	160 600	20.0	168 630	21.0	dna	8 030
Togo	2 009 897	dna	dna	dna	dna	dna	dna
ECOWAS	126 297 849	25 108 330	24.5	118 212 216	54.1	1 790 256	775 772

Source: Data compiled from national consultants reports (2013)

Annex Table 4: Physical flow of camels in 2011

Countries	National stock	Exploitation		Slaughtering		Exportation	
		Number	Rate	Number	Rate	Number	Rate
Burkina Faso	17 317	1 385	8.0	1 371	99.0	14	1.0
Mali	940 964	28 229	14.0	1 817	6.0	13 255	47.0
Niger	1654 805	198 577	12.0	90 913	46.0	66 697	44.0
Nigeria	277 727	46 210	17.0	58 559	21.0	52	1.0
Senegal	4 770	71	1.5	71	1.5	dna	dna
ECOWAS	2 895 583	274 472	10.5	152 731	34.7	80 018	18.6

Source: Data compiled from national consultants reports

Annex Table 5: Physical flow of pigs in 2011

Countries	National stock	Exploitation		Slaughtering		Export/import	
		Number	Rate	Number	Rate	Export	Import
Benin	383 000	47 221	12.3	47 221	12.3	dna	2 814
Burkina Faso	2 210 565	1 326 339	60.0	201 415	dna	3 828	dna
Cabo Verde	80 893	48 536	60.0	dna	dna	dna	dna
Côte d'Ivoire	343 000	217 000	63.0	217 000	dna	dna	dna
Gambia	42 384	21 192	50.0	21 192	dna	dna	dna
Ghana	568 000	318 080	56.0	23 608	dna	dna	2
Guinea	99 875	dna	dna	1 496	dna	dna	dna
Guinea Bissau	343680	dna	dna	dna	dna	dna	dna
Mali	75 765	46 217	61.0	4 802	dna	360	dna
Niger	3 955	dna	dna	dna	dna	dna	dna
Nigeria ¹⁴	6 040 820	3 037 013	50.0	2 469 467	dna	4 882	40 392
Senegal	364 325	269 400	73.9	269 400	73.9	dna	dna
Sierra Leone	47 364	14 209	30.0	14 209	dna	dna	47 364
Togo	315 184	dna	dna	dna	dna	dna	dna
ECOWAS	10 918 810	5 345 207	51.62	3 269 810		9 070	90 572

Source: Field data compiled by the consultant from national consultants reports

Annex Table 6: Main animal breeds in West Africa

Countries	Cattle	sheep	Goat	Camel	Pig
Benin	Taurine Lagunaire, Borgou	Djallonke, Sahelian, Djallonke-Sahelian crosses	Djallonke, Sahelian, Djallonke-Sahelian crosses		
Burkina Faso	Taurin NDama, zébus Djelli, Azawak	Mossi, Peulh	Djallonke, Sahelian, Djallonke-Sahelian crosses		
Cabo Verde	Friesian	Peul BALI BALI	Saanen, Majorera (îles Canaries), Anglo-nubian (Brésil),		Large White, Landrace Duroc, Kho-rogo.
Côte d'Ivoire	WASH, Sanga, N'Dama, Baoule, Fulani, Jersey, Friesian-Sanga crosses	Djallonke, Sahelian, Djallonke-Sahelian crosses	Djallonke, Sahelian, Djallonke-Sahelian crosses		
Gambia	N'Dama, Gobra zebu	Djallonke, Cross breed	Sahelian, WAD-Goat*, Cross breed		WAD- Pig, Landrace, Cross breed
Ghana	WASH, Sanga, N'dama, Fulani, Jersey, Friesian-Sanga crosses	Djallonke, Sahelian, Djallonke-Sahelian crosses	Djallonke, Sahelian, Djallonke-Sahelian crosses		Ashanti Black, Large White, Landrace, crosses
Guinea	N'Dama,	Djallonke,	Djallonke,		

¹⁴ Nigeria National stock of livestock in 2009

Countries	Cattle	sheep	Goat	Camel	Pig
Guinea Bis-sau	Taurine N'Dama, Zebu Gobra	Djallonke,	Djallonke,		
Mali	Taurine: N'Dama, Zebu : Maure, Azawak, Bororo, Toronké	Macina, Ara-ara,	WAD goat Sahelian, Djallonke-Sahelian crosses	Azawak, Azarghaf	
Niger	Taurine : Kouri, Zebu: Azawak, Mbororo, Djelli Gudali and various Crosses	Bali-bali, Oudah, Balami, Ara-ara, Macina/Koundoum Hadine Dane Zaila and Crosses	Chèvre Rousse Maradi, Sahelian, Crosses	Azawak, Azarghaf Manga/Yoria, Crosses	
Nigeria	Gudali, Bunadji, crosses	Oudah, Balami,	Sokoto goat, WAD goat Sahelian, crosses	local	
Senegal	Maure, Gobra, N'Dama, Crosses	Touabir, crosses	Sahelian , WAD goat	local	
Sierra Leone	NDAMA	Local	WAD goat		
Togo	WASH ¹⁵ : Race Lagunaire, Somba, locale type somba ; Taurins with long horn : N'Dama, Zébus peuls, Borgou	Vogan sheep, Djallonke sheep, Sahelian sheep	Djallonke goat, Sahelian goat		Locale breed or indigenous, Land race, Large White, crosses

* WAD: West African Dwarf

Source: field data compiled by the consultant from national consultants reports (2013)

Annex Table 7: Association and cooperatives involved in livestock and milk value chains in ECOWAS Member States

Countries	Names of the Associations and cooperatives
Benin (6)	<ul style="list-style-type: none"> - Association Nationale des Eleveurs de Ruminants - Association Nationale des Eleveurs de porcs - Fédération nationale de bouchers et charcutiers - Fédération nationale des Bouchers et Charcutiers - Société de commercialisation du lait de Gogounou - Groupements des producteurs de Wagashi
Burkina Faso (6)	<ul style="list-style-type: none"> - Coopérative de producteurs de lait (COPROLAIT) - Centre d'encadrement technique en insémination artificielle (CETIA) - Association des éleveurs exportateurs de bétail de Ouagadougou (ASSELEXBO) - Association des Professionnels de la Filière Avicole Moderne (APOFAM) - Association des Commerçants de Cuirs et Peaux du Burkina (ACCPB) ; - Association pour le Développement de la filière cuirs et peaux (ADFCP)
Cabo Verde (2)	<ul style="list-style-type: none"> - ASSOCIATION " RESISTENTES DO PLANALTO NORTE": Cheese production - Union Cooperative of FOGO (UNICOOP-FOGO) : animal feed / concentrate

¹⁵West African Short Horn

Countries	Names of the Associations and cooperatives
Côte d'Ivoire (6)	<ul style="list-style-type: none"> - Departmental Association of breeders of Korhogo :FEDEK - Other: GEPRUFER, UCBK, APEBOC, COFERLO. - Sheep and goat Association of producers of South-East (APROCASUDE), - Departmental Association of breeders of Korhogo :FEDEK et - Confederation of National federation of livestock/Meat : COFENABVI - Other : APEMC ; PROPERKO ; APRODJALCI ; FENAPPRU-CI
Gambia (7)	<ul style="list-style-type: none"> - Livestock Owners Association (LOA): oldest association - Sheep and Goat Breeding and Fattening Association - The Gambia Indigenous Livestock Multiplier Association - The Pig Farmers Association - The Livestock Dealers Association - The Butchers' Association - Dairy Cooperatives
Ghana (3)	<ul style="list-style-type: none"> - Ghana National Dairy Farmers Association - Ghana Co-operative Butchers and Small Scale Livestock Owners Association Ltd - National Pig Farmers Association - National Feed Millers Association - 10 Regional Livestock Farmers Associations
Guinea (7 categories)	<ul style="list-style-type: none"> - 204 sub-district unions of breeders - 38 districts and municipal unions of breeders - 8 regional federation of breeders - 1 confederation of breeders of Guinea (CONEG) ; - 238 committees of Health Defence (CDS) ; - 54 committees for conflict resolution in the transhumance zone - 10 Milk women groupings
Guinea Bissau (5)	<ul style="list-style-type: none"> - Association Balal Gaynancobé à Gabú - Association des éleveurs de bétail de Bafata - Association National des bouchers - association National des agriculteurs de Guinée Bissau (ANAG) - Ordre des Médecins vétérinaires (créé depuis 1998)
Mali (15)	<ul style="list-style-type: none"> - National Order of Veterinary Profession of Mali, - ANAVEM : National Association of Veterinarians of Mali, - National Association of Livestock Engineers of Mali, - FEBEVIM: Federation of Interprofessional Grouping of Livestock-Meat of Mali, - SYNEMAB: National Union of livestock Breeders and Dealers, - FIFAM: Inter-professional Federation of Poultry value chain of Mali, - FENALAIT: National Federation of Milk value chain actors - SYNELPROV: National Union of Dairy Farmers and Meat Producers, - SYNEB: National Union of Breeders and livestock Dealers. - CNOP: National Coordination of Peasant Organizations - AOPP: Association of Professional Peasant Organizations - FENAJER: National Federation of Rural Youth - FENAFER: National Federation of Rural Women - ASCOMA: Consumer Association of Mali - REDECOMA: Consumer Coalition of Mali

Countries	Names of the Associations and cooperatives
Niger (9)	<ul style="list-style-type: none"> - Association for Re-activating Livestock in Niger (AREN), - National Federation of Breeders of Niger (FNEN DADO), - Collective of pastoral association of Niger (CAPAN), - Network Bilital Maroobe - Peasant Platform of Niger (PFPN) - Professional organizations - Veterinary National Order of Niger (ONVN); - National Association of Veterinarians of Niger (ANVN) ; - National Association of zootechnicians and Pastoralists (ANZOOPA) ;
Nigeria (1)	<p>The “Miyetti” Allah Cattle Breeders Association of Nigeria (MACBAN)</p> <ul style="list-style-type: none"> - 12 Associations of Cattle Breeders - 1 Confederation of Cattle Breeders - 8 Women milk cooperative Societies - 7 Male milk Cooperative Societies
Senegal (58)	<p>56 Livestock Producers Organizations</p> <ul style="list-style-type: none"> - National Federation of Milk Sector stakeholders in Senegal (FENAFILS) - National Association of Professional Meat and Livestock in Senegal (ANPROVBS)
Sierra Leone (7)	<ul style="list-style-type: none"> - NAFFSL. Address - 33A Hill Street, Off Wesley Street, Freetown. Contact person: Mr Jesse Olu John – (President); Mobile phone: +232-76-605-894; Email: naffsl2009@yahoo.com - The Pig and Poultry Farmers Association (PPFASL) (membership of 55 farmers). Contact person: Mr Emile S. Kargbo President; T: + In the Koinadugu District there are 784 cattle famers organized into four (4) associations: - Joni Cattle Farmers Association; contact person - Mr Mohamed Boie Jalloh; Phone: + 232-78-385-815 - Wallidra Cattle Farmers Association; contact person - Alhaji Abdul Barrie; T:+232-76-967-319 - Walliderien Cattle/Crop Farmers Association; contact person - Mr Sarjoh Bah; T:+232-76 – 795-906 - Jogodirien Cattle Farmers Association; contact person - Mr Atigu Jalloh; T:+232-76-588-217 - United Federation of Butchers (membership: 700 retail traders and butchers). It is an amalgamation of the National Butchers Union and the Central Butchers Association. The contact person is: Mr Saidu O Jalloh; Office address: Dove Court market; T: 232-76-762273.
Togo (3)	<ul style="list-style-type: none"> - Union of National Associations of Butchers of Togo (SYNANBOUCTO) - National Federation of the livestock industry and meat Togo (FENAPFIBVITO) - Grouping of private veterinarians (GVPR)

Source: field data compiled by the consultant from national consultants reports (2013)

Annex Table 8: NGOs acting in support to the value chain in ECOWAS Members' States

Countries	Names of the association	Contacts
Benin	Action pour le Développement Economique et sociale du Benin	Bp 05 Athieme
	African Development Foundation	Bp 03-0314 Cotonou
	Association de Lutte pour un Développement Intégré et pour la protection de l'environnement	Bp 2193 Abomey Ou Bp21 Abomey
	Association des jeunes Ruraux pour l'Agriculture et Elevage	01 Bp334 Cotonou
	Association pour le Développement des Initiatives Villageoises	Bp 06 733 Cotonou
	Association Néerlandaise de Développement	Bp 1048 Cotonou
	SONGHAI (Bureau local)	Bp 597 Porto-Novo
	AFRICARE-Bénin (Bureau Local)	01 BP 3142 Cotonou
Burkina Faso	311 national and international NGOs (VSF-Belgium) are involved in Agriculture, Environment, Hydraulic, Food security, micro finance and livestock	-Bureau de Suivi des ONG (BSONG) : Tél. : 50 32 47 52 Ouagadougou -Secrétariat Permanent des ONG (SPONG) : 01 BP 131 Ouagadougou 01 ; Tél. : 50 31 71 02 ; Fax : 50 30 40 20
Cabo Verde	Associação « Amigos da Natureza »/ Pigs, Goat genetic amelioration and cheese processing Atelier « MAR » : renforcement de capacité	
Côte d'Ivoire	No NGO reported	
Gambia	No NGO reported	
Ghana	There are over 50 NGOs in the regions supporting the live-stock/meat value chains with only the Heifer Project International supporting the milk value chain	Tel: +233 302 501381
Guinea	- Academic support for development (EUPD) - Veterinarians Without Borders (VSF) - Win rock International NGOs - Union for Solidarity and Development (USD) - Association of Engineers zoo technicians Guinea - Association for the Advancement of Animal Resources and the Environment (APRAPE)	
Guinea Bissau	- DIVUTEC- Support in micro finance - PROAGRI – Training of animators - APRODEL - Animal health, micro finance, animal husbandry	Tel:(00245)6622913 BissauCx.p-03 Bafata Tel:(00245)6335784 Bafata
Mali	JEKASSI : Capacity building and pastoral management VSF –Belgium & France: Animal Health and Production, ACOD Niétasso: Capacity building and pastoral management CAB Demoso: Milk collection centres DCI/ICD: Cooperation and Development Initiative / Support to animal health and production.	

Countries	Names of the association	Contacts
Niger	<ul style="list-style-type: none"> - International NGOs: VSF-Belgium, SNV, OXFAM - Local NGOs: NGO Karkara, AREN, FNEN DADO, CAPAN, Network Bilital Maroobé 	
Nigeria	Integrated Dairy Farm, Maizube Farm, Fan Milk, Cowbell, Niyya Farms, Nagari Integrated Dairy Farm, Jamil Farm, Sebore Farm, Friesland Campina Wamco and MILCOPAL are the top 10 milk processors that together supplied 3 per cent of the local milk delivered to the market.	
Senegal	Enda tiers monde, AVSF, etc.	
Sierra Leone	<ul style="list-style-type: none"> - Heifer International - GIZ on behalf of the German Federal Ministry for Economic and Development (BMZ). - BRAC 	Rashid.Sesay@heifer.org ; T: 23276- 671-303; Marina Mdaihli; email: marina.mdaihli@giz.de mostafa.mk@brac.net
Togo	<ul style="list-style-type: none"> - Agronomes & Veterinaries Without Borders (AVSF) ; - Livestock Without Borders/Elevage Sans Frontières ; - Support Network for Integrated Development (RADI) ; - Rears Support and training Initiatives for self-Development (RAFIA), etc. 	

Source: field data compiled by the consultant from national consultants reports (2013)

Annex Table 9: Current national project and programmes on livestock in ECOWAS Members' States

Countries	Current projects and programmes	Budgets (million \$US dollars)	Funding partner
Benin ¹⁶	Meat and milk value chains support project (PAFILAV)	43.4	
Burkina Faso	Agros-sylvo-pastoral value chains support project (PAFASP).	66	WB
	Agriculture development support programme in Burkina Faso Phase 2 (PADDAB-II: Livestock/ meat, pigs traditional poultry cowpea). PCESA to be started in 2014	55	Denmark
	Crop value chains support project (PROFIL : meat of sheep, goat and poultry)	14.3	IFAD
	Peri urban (Ouagadougou) dairy farm development project (PDEL ZP Ouagadougou)	30	BID
	Zebu Azawak improvement and sustainable pastorage resources management (PARP)	7.87	Belgium
	Creation of tse-tse free zones and trypanosomiasis project (PCZLDM)	16.8	BAD
	National bio-digester programme (PNB BF)	7.6	HIVOS, ABPP
	Soil fertility and crop intensification programme (PI-	dna	IFAD

¹⁶In Benin, in addition to projects on livestock/meat and dairy value chains, there are some support projects on poultry vaccination, poultry development and grass cutter production

Countries	Current projects and programmes	Budgets (million \$US dollars)	Funding part- ner
	COFA :support to traditional livestock value chain – pastoral resources management		
	Land management national program Phase 2 (PNGT-II : park of vaccination, slaughtering area, fodder, live-stock market pound)	4	BM
	Total investment	220.57	
Cabo Verde	Project of promotion of improvement of family live-stock and sustainable natural resources management	dna	
	TCP/CVI/3303 (E) – Emergency Assistance for the control of African Swine Fever	dna	
	Local breed improvement	dna	
	Animal diseases epidemiological surveillance	dna	
	Total investment	dna	
Côte d'Ivoire	Livestock development support project in Cote d'Ivoire (PADECI),	48.52	RCI - Partner
	INTEGRATED MANAGEMENT OF RANCH AND STATIONS PROJECT (PROGIRS)	33.45	RCI
	Animal health and veterinarian public hygiene improvement project (PASA-HPV)	30	RCI
	Total investment	111.97	
Gambia	Livestock and Horticulture Development Project (LHDP)	dna	
	Food and Agriculture Sector Development Project (FASDEP).	dna	AfDB -IFAD
	Appui à l'organisation de campagnes nationales de vaccination contre la <i>maladie de Newcastle</i>	0.175	UEMOA
	Appui à l'organisation de campagnes de lutte contre le <i>Charbon bacteridien</i> .	0.48	UEMOA
	Total investment	0.655	
Ghana	FAO Human Security Programme /UNDP/GHA/032/ UNO) in Conflict Prevention In Northern Ghana.	dna	FAO/UNDP/
	Northern Rural Growth Project	dna	AfDB/IFAD/GOG
	Animal Genetic Resources(AnGR)	dna	FAO
	Afram Plains Agricultural Development Project	dna	GoG/AfDB
	FAO Enhanced Guinea Fowl Project	dna	FAO
	GIZ Guinea Fowl Value Chain Development	dna	GIZ
	FAO Human Security Programme/UNDP/GHA/032/UNO) in Conflict Prevention In Northern Ghana.	dna	FAO/UNDP
	Northern Rural Growth Project	dna	AfDB/IFAD/GOG
	MASLOC Poultry Project	dna	GOG
	Reinforcing African Veterinary Governance	dna	10th EDF(Intra ACP)
	Livestock in-kind-scheme for cockerels	dna	GOG

Countries	Current projects and programmes	Budgets (million \$US dollars)	Funding partner
	Pan African Trypanosomiasis and Tsetse Eradication Programme	dna	AfDB
	Total investment	dna	
Guinea	Total investment	dna	
Guinea Bissau	Financial support convention for the organization of the campaign of control of anthrax	0.5	UEMOA
	Total investment	0.5	
Mali	Support project of the development of livestock in western Sahel (PADESO)	26.634	OPEP- GoM
	Support project of the development of livestock in North and East of Mali Sahel Phase II (PADENEM).	28.468	AfDB -GoM
	Support project of the development of livestock zebu <i>Maure</i> in the district of Nara in f western Sahel (PRODEZEM)	11.544	Belgium -GoM
	Support project of livelihoods improvement of the vulnerable and poor people (PAACV-Tonka)	2.812	GoM
	Project of construction of Equipment and infrastructure of processing and marketing of livestock.	12.154	GoM
	Integrated programme of development for poverty alleviation in ONDY Zone (PDIRP/ONDY) Yanfolila	2.044	
	Poultry development project in Mali (PDAM)	3.766	BADEA
	Project of the processing of slaughtering sub-products (PTSPA)	2.264	BADEA
	Support project for the development of animal production in southern zone of (PADEPA-KS).	26.412	AfDB-GoM
	Project of the Development and valorization of local fresh milk (PRODEVALAIT)	0.4	GoM
	Programme of control of tse-tse and animal trypanosomiasis (PLMT).	2.22	GoM
	Five years programme of the control Contagious Bovine Peripneumonia	2.302	GoM
	Support programme to crop sector in Mopti region in Mali (PASAM)	27.966	DANEMARK
	Programme of crop productivity improvement in Mali (PAPAM)	160	IDA, FEM, IFAD, UE, PNUD, GoM
	Total investment	308.986	
Niger	Support project for the promotion of the peri urban milk value chain in Niamey (APROLAN).	0.47	Belgium
	NARIINDU Project: support to the collect, quality control and marketing of local milk in the peri urban zone of Niamey.	0.66	FISONG- AFD & CFSI ¹⁷

¹⁷FISONG-AFD : Facilité d'Innovation Sectorielle pour les ONG – Agence Française de Développement ;
CFSI : Comité Français pour la Solidarité Internationale

Countries	Current projects and programmes	Budgets (million \$US dollars)	Funding partner
	National programme of genetic improvement of local cattle (PNAG/BL)	20.71	Niger Budget
	Support programme of management and protection of pastoral system	17.29	Niger - Belgium
	Project of the development of s Exportations and agro-sylvo-pastoral (PRODEX)	43.25	IDA
	Support project for the Competitively and grow (PRACC)	50	IDA
	Support Programme for institutional reinforcement of livestock Ministry (ARIMEL)	2.624	Belgium Coop.
	Total investment	135.004	
Nigeria	Agricultural Transformation Agenda	3.12	
	FRIESLANDCAPINA WAMCO Dairy Development Programme	2.0	
	Nigerian Dairy Enterprise Initiative:	0.023	USAID
	Federation of Rural Dairy Cooperative Associations in Kaduna State, Nigeria	3.25	
	Sheep and Goat Multiplication Centre	n/a	
	Total investment	8.4	
Senegal	Special programme of insemination a (PSIA)	0.17	Senegal
	Crop programme/ Livestock component	7.03	Senegal
	Rural area equipment programme (PEMR)	3.2	Senegal
	Support fund for Stabilization (FONSTAB)	5.24	Senegal
	Project of livestock development and milk value chain structuration in Dagana Department	2.33	AFD, CFSI, Fondat. France, IFPRI, Monaco
	Total investment	17.97	
Sierra Leone	Special Funds for Emergency Rehabilitation Activities (SFERA)	0.20	EU
	Improving the productivity of Ndama cattle in Sierra Leone (IAEA TC SIL 5056)	0.21	IAEA
	Dual purpose goat development in Sierra Leone (DeIPHE- 577) project.	0.098	UK ,DFID
	Strengthening Farmer-Researcher-Linkage in Evaluating Integrated Livestock Feeding Systems involving Protein Banks (DeIPHE 772) project	0.068	UK, DFID
	IAEA TC project SIL/5/013 "Establishing a dual-purpose cattle development project for the sustainable contribution to food security, poverty alleviation and improved livelihoods of communities raising cattle".	0.156	IAEA
	Control of economic important livestock diseases (ND and PPR) in Sierra Leone project	0.075	IAEA
	Vaccines for the Control of Neglected Animal Diseases in Africa (VACNADA) project.	0.07	EU

Countries	Current projects and programmes	Budgets (million \$US dollars)	Funding partner
	Total investment	0.88	
Togo	TCP/TOG/3103E: Emergency Assistance and preparation of a strategic for anthrax control	0.145	FAO
	Project « Epidemiology of animals trypanosomiasis in relation to drug resistance in Kara and Savana regions in Togo (PAES)	0.06	UEMOA
	Support project to the Productivity of livestock in the agro pastorals systems of North Togo (PAPE Togo).	0.195	EU
	Integrated rural development project of the zone of Mô (PDRI-Mô)	dna	
	Projet de Développement Rural de la plaine de Djagblé, PDRD	dna	
	Support project of crop sector (PASA)	dna	World Bank
	Total investment	0.4	
Total of current and identified investment for livestock in West Africa		812.007 million \$US	

Source: field data compiled by the consultant from national consultants' reports.

Annex Table 10: Current regional projects and programmes in West Africa

Current projects and programmes	Budget (million \$US)	Funder	Countries of implementation
Governance of veterinary services			
Programme of veterinary services governance in Africa (VET-GOV)	dna	AU-IBAR, EU/EDF	ECOWAS MS
Programme of the reinforcement of the conformity of veterinary services to the OIE standards of quality (PNSV)	dna	OIE	Africa
Natural resources management and conservation			
Dry land Livestock- Wildlife – environment Interface Project (DELWEIP)		AU-IBAR	Benin, Burkina, Niger
The Sustainable Management of Globally Significant Endemic Ruminant Livestock of West Africa project PROGEBE	11.324	AfDB, FEM, Gov.	Ghana, Gambia, Mali, Senegal, GUINEA
Animal health			
PATTEC West Africa : Pan African Tsetse and Trypanosomiasis Eradication In n West Africa	11.48	AfDB-Gov.	West & East Africa (Ghana and Burkina Faso)
TRYRAC (Trypanosomiasis Rational Chemotherapy Project)	0.31	EU	South Africa, Burkina Faso, Ethiopia, Mozambique, Togo
Value chain development			
Agribusiness and Trade Promotion (ATP) Project	dna	USAID	Burkina Faso, cote

Current projects and programmes	Budget (million \$US)	Funder	Countries of implementation
			d'Ivoire, Niger, Nigeria
Promoting regional trade in meat and livestock in ECOWAS	dna	World Bank	Mali, Burkina Faso, Niger, Cote d'Ivoire Ghana and Nigeria
West African Agricultural Productivity Programme WAAPP	dna	IDA/ WB	West Africa
Support project to the selection and Multiplication of Azawak zebu in Mali (PASMZAM) :	3.782	Belgium	Burkina Faso, Mali, Niger.
Support project for the sustainable improvement of the productivity and competitiveness of cattle milk value chains in West and Central Africa (AMPROLAIT) :	0.45		Burkina Faso, Cameroun, Niger, Senegal and Chad
Milk – Gardening Project	0.140	CRDI	Togo, Mali, Niger
Livestock development project of Liptako Gourma region (PDELG) :	7 835	BID	Burkina Faso, Mali, Niger
Quality Improvement of the leather and skins quality in West Africa Project	dna		Burkina Faso, Mali, Niger, Senegal

Source: field data compiled by the consultant from national consultants' reports (2013)

Annex Table II: Policy instruments for the management and exploitation of natural resources

Countries	Text and law
Benin	<ul style="list-style-type: none"> - Loi cadre sur l'environnement - Loi portant organisation des Communes qui attribue à ces dernières des compétences claires en matière des ressources naturelles. - Loi portant régime foncier rural en République du Bénin. - Plan Stratégique de Relance du Secteur Agricole (PSRSA)/PIA
Burkina Faso	<ul style="list-style-type: none"> - Politique nationale forestière (PNF, 1996) - Politique et stratégies en matière d'eau (juillet 1998) - Politique nationale d'aménagement du territoire (Décret n°2006-362) - Politique nationale en matière d'environnement (Décret n° 2007-160)
Cabo Verde	-
Côte d'Ivoire	<p>loi relative au foncier rural</p> <p>Loi n°2002 du 11 février 2002 relative à la création, à la gestion et au financement des parcs nationaux et des réserves naturelles</p> <p>Loi n°98-755 du 23 décembre 1998 portant code de l'eau,</p> <p>Loi n°64-490 du 21 décembre 1964 relative à la protection des végétaux</p> <p>Loi n°94-442 du 16 août portant modification de la loi n° 65-255 du 04 août 1965 relative à la protection de la faune et de la commercialisation des semences et plants</p> <p>Décret portant n°86-378 du 04 juin 1986 portant création d'un comité national de défense de la forêt et de lutte contre les feux de brousses</p> <p>Décret 71-44 du 22 janvier 1971 modifiant le décret 65-292 du 2 septembre 1965 portant création d'un comité consultatif de la protection des végétaux</p> <p>Décret n°63-457 du 7 Novembre 1963 fixant les conditions d'introduction et d'exportation des végétaux et autres matières susceptibles de véhiculer des organismes dangereux pour les cultures.</p>

Countries	Text and law
	<p>Arrêté interministériel du 15 février 1999 portant institution du comité technique d'inscription au catalogue officiel des espèces de variétés végétales</p> <p>Loi n°87-806 du 28 juillet 1986</p> <p>Loi n°67-47 du 02 février portant création du comité consultatif des pêches</p>
Gambia	Agriculture and Natural Resources (ANR) Policy Framework (2009-2015)
Ghana	<p>Diseases of Animal Act 1961 Act 81</p> <p>Food and Drugs Authority Act 1992 (PNDCL 3058B)</p>
Guinea	<p>Document de stratégie incluant :</p> <ul style="list-style-type: none"> - l'amélioration de la gestion de la transhumance ; - l'amélioration de la gestion des pâturages, des points d'eau et des troupeaux pour réduire la divagation des animaux ; - l'amélioration de la connaissance des pâturages du pays ; - le renforcement des compétences des éleveurs en matière de gestion des ressources pastorales. - l'intégration agriculture- élevage à travers la promotion de la production d'animaux de trait (bœufs de labour) et le renforcement de tous les systèmes de production valorisant la fumure organique ; - le développement de l'approche holistique du programme des périmètres pastoraux pilotes pour l'amélioration et la gestion des pâturages naturels par une vulgarisation à grande échelle des acquis ; - le développement de l'aménagement des têtes de sources, des retenues pastorales et la création de points d'eau (retenues collinaires et puits pastoraux) pour l'abreuvement des animaux, surtout en Haute-Guinée, Moyenne Guinée et Guinée Forestière.
Guinea Bis-sau	<p>Document National pour la Réduction de la Pauvreté (DENARP II),</p> <p>Lettre de Politique de Développement Agricole (LPDA),</p> <p>Lettre de Politique de Développement de l'Élevage (LPDE)</p> <p>Programme National de la Sécurité Alimentaire (PNSA) et le Programme National d'Investissement Agricole (PNIA).</p>
Mali	<p>La politique nationale de protection de l'environnement;</p> <p>La Charte pastorale;</p> <p>La politique nationale des zones humides;</p> <p>La politique nationale de l'assainissement;</p>
Niger	<p>Loi n°61-05 du 26 mai 1961, fixant la limite nord des cultures</p> <p>La Loi n°70-019 du 18 septembre 1970, portant Code de l'élevage</p> <p>Le Décret n°87-77 de juin 1987, portant Régime de circulation du bétail en zone agricole</p> <p>L'Ordonnance 92/30 du 8 juillet 1992 portant adoption des principes directeurs d'une politique de développement rural pour le Niger</p> <p>L'Ordonnance n° 93-015 du 02 mars 1993 portant principes d'orientations du Code rural</p> <p>L'Ordonnance n°93-28 du 30 mars 1993 modifiée par la Loi 2008-22 du 23 juin 2008 fixant le statut de la chefferie traditionnelle au Niger, notamment ses articles 14, 15 et 16 qui précise son statut et son rôle dans la régulation de l'accès aux ressources naturelles, dont les parcours.</p> <p>La Loi n°98-56 du 29 décembre 1998, portant loi cadre relative à la gestion de l'Environnement</p> <p>La Loi n° 2004-048 du 30 juin 2004 portant sur la Loi cadre relative à l'élevage</p> <p>L'ordonnance 2010-09 du 1^{er} avril 2010 portant code de l'eau</p> <p>L'Ordonnance 2010-029 du 20 mai 2010 relative au pastoralisme qui reconnaît le plein</p>

Countries	Text and law
	exercice des élevages transhumants, incluant l'aménagement pastoral comme un tout composé de points d'eau, de parcours, d'axes de transhumances, d'aires ou d'enclaves pastorales L'Ordonnance 2010-54 du 17 septembre 2010 portant Code général des collectivités territoriales en République du Niger, précisant notamment la responsabilité de gestion des infrastructures relatives à l'élevage
Nigeria	
Senegal	Loi d'Orientation agro-sylvo-pastorale La délimitation des zones pastorales et de parcours du bétail, l'exploitation des ressources en eau devraient bénéficier d'une politique spécifique qui favorise le développement de l'élevage.
Sierra Leone	National Action Plan for the implementation of the United National Convention to combat Land Degradation is being prepared National Environmental Commission has been set up in 2005 to coordinate environment issues in the country.
Togo	<ul style="list-style-type: none"> - Stratégie de Croissance Accélérée et de Promotion de l'Emploi (SCABO 2013-2017) - Document de politique pour la période 2013-2022 : Axe 2 le développement des productions animales - Stratégie de Relance de la Production Agricole (SRPA 2008-2011) - Programme national d'investissement agricole (PNIASA 2011-2015) - Programme national de sécurité alimentaire (PNISA)

Source: field data compiled by the consultant from nationals consultants' reports (2013)

Annex Table 12: Acts, regulations and laws governing the value chain in ECOWAS members' States

Countries	Acts, regulations, decree and laws
Benin	<ul style="list-style-type: none"> - Act on the organization of Commons that assigns to them with clear expertise in natural resources. Act on rural land regime in the Republic of Benin. - Strategic Recovery Plan for Agricultural Sector (PSRSA) / PIA
Burkina Faso	<p>16 laws, 24 decrees and 200 regulation; 75 per cent of the texts on animal health followed by pastoralism. Under the laws we can retain some of the latest:</p> <ul style="list-style-type: none"> - Guidance on pastoralism law (LORP) 2004; - Law o of 2012n the genetic improvement; - Law on the inter profession -2013; - Law 034-2012 / AN on the Agrarian and Land Reform in Burkina Faso. <p>Decree No. 2010-785) on National Policy for Sustainable Livestock Development (PNDEL),</p>
Cabo Verde	<ul style="list-style-type: none"> - Decree – law No. 68/2005, of October 31, which establishes the regime of Export and Import of goods and regulatory qualifications; - Decree -Law No. 69/2005, of October 31, which defines and establishes conditions Registrar and the performance of the business by wholesale and retail, and the role of government; - Ministerial Decree No. 17/2008, of June 16th, 2008 determining the non-minimum capital requirement for the exercise of the importer business wholesaler and retailer.
Côte d'Ivoire	<ul style="list-style-type: none"> - Law No. 97-721 of 23 December 1997 on Cooperatives;

Countries	Acts, regulations, decree and laws
	<ul style="list-style-type: none"> - Law No. 98-750 of 23 December 1998 on Rural Land Area; - Law No. 2001-635 of 9 October 2001 on the establishment of Fund for Agricultural Development (no creation of the fund). - Law No. 63-323 of 25 July 1963 on health Police in the Republic of Côte d'Ivoire. - Law No. 63-328 of 29 July 1963 laying down the rules of the animals health Police modified by Decree No. 67-413 of 21 September 1967 - Law n ° 63-301 of 26 June 1963, on the suppression of fraud in the sale of goods and falsifications of animal food and agricultural products - Law No. 91-999 of 27 December 1991 on competition - Law No. 96-563 of 25 July 1996 on the sanitary and quality inspection of animal products - Law No. 001 / MINAGRA / MEF / MPC1 / MPCE / MDPa of January 4, 1999 levying compensatory amount on animal products import - Law No. 2003-2008 of 7 July 2003 on the transfer and distribution of state powers to local authorities
Gambia	<ul style="list-style-type: none"> - Diseases of Animal Act (1844); - the Medicines Act (1984); - the Veterinary Council Act (2000); - the Food Safety and Quality Act (2011); - the Gambia Livestock Marketing Agency Act (2008); - the Gambia Standards Bureau Act (2010):
Ghana	<ul style="list-style-type: none"> - Diseases of Animal Act 1961 Act 81 - Veterinary Council Act - Food and Drugs Authority Act
Guinea	<ul style="list-style-type: none"> - Trade Regulating Acts in Guinea, - Livestock and livestock products Codes - Pastoral code, - Local authorities Code
Guinea Bissau	<ul style="list-style-type: none"> - Code of Livestock updated in 2009
Mali	<ul style="list-style-type: none"> - Law No. 92-013 / AN-RM dated 17/09/1992 on the establishment of a national system of standardization and quality control, - Law No. 02-001 / PRM of 16 January 2002 laying down the conditions of production, processing and marketing of milk and milk products - Law No. 1-004 of 27 February 2001 on the Pastoral Charter in the Republic of Mali; - Law No. 93 / AN-RM on the code of local authorities in the Republic of Mali; - Law No. 05-008, February 11, 2005 and Law No. 05-010 of the same date relating respectively to the creation of the National Directorate of Animal Production and Animal Industries and National Directorate of Veterinary Services; - Law No. 01-021 of 30 May 2001 governing the veterinary profession; - Law No. 01-062 of July 4, 2001 governing the veterinary pharmacy; - Law No. 00-083 of 22 December 2000 on the ratification of Ordinance No. 00-044 / PRM 21 September 2000 governing the production, distribution, control, import and export of seeds and embryos and animal breeding.
Niger	<ul style="list-style-type: none"> - Law No. 61-05 of 26 May 1961 fixing the northern boundary of cultures - Law No. 70-019 of 18 September 1970 on the Code of livestock - Decree No. 87-77 of June 1987 governing the movement of livestock in agricultural areas

Countries	Acts, regulations, decree and laws
	<ul style="list-style-type: none"> - Ordinance 92/30 of 8 July 1992 adopting the guiding principles of a rural development policy for Niger - Ordinance No. 93-015 of 2 March 1993 laying down principles for guidance of the Rural Code - Ordinance No. 93-28 of 30 March 1993 amended by Act 2008-22 of 23 June 2008 laying down the rules of traditional chieftaincy in Niger, in particular Articles 14, 15 and 16 which specifies its status and role in regulating access to natural resources, including course. - Law No. 2004-048 of 30 June 2004 on the Framework Act for breeding - Ordinance 2010-029 of 20 May 2010 on pastoralism that recognizes the full exercise of livestock transhumance, including range management as a whole composed of water points, of course, axes transhumance, areas or pastoral enclaves - Ordinance 2010-54 of 17 September 2010 establishing the general code of local authorities in the Republic of Niger, indicating in particular the responsibility of management infrastructure for rearing.
Nigeria	<p>Agencies:</p> <ul style="list-style-type: none"> - National Agency for Food and Drug Administration and Control (NAFDAC), - Standards Organization of Nigeria (SON), - Nigeria Agricultural Plant Quarantine Services (NAQS) and - Consumer Protection Council; <p>The major Nigeria's food laws:</p> <ul style="list-style-type: none"> - Food and Drugs Act (Cap 150) of 1990 as amended by Decree 21 of 1999 (formerly called Food and Drugs Decree 35 of 1974) - The Animal Disease Control Decree 10 of 1988 - The Marketing of Breast Milk Substitutes Decree 41 of 1990 - NAFDAC Marketing of Infant & Young Children Food and other - Designated Products (Registration, Sales, etc.) Regulations 2005 - Counterfeit and Fake Drugs and Unwholesome Processed Foods (Miscellaneous Provisions) Decree 25 of 1999 - The National Agency for Food and Drug Administration and Control (NAFDAC) Decree 15 of 1993 (as amended by Decree 19 of 1999) - Drugs and Related Products (Registration etc.) Decree 1993
Senegal	<ul style="list-style-type: none"> - Orientation Agro-Sylvo-Pastoral Law (LOASP, Law No. 2004-16 of May 25, 2004)
Sierra Leone	<ul style="list-style-type: none"> - The Animal Diseases Act of Sierra Leone, 2011"
Togo	<ul style="list-style-type: none"> - Law No. 98/19 of 23 December 1998 on the practice of veterinary function; - Law No. 99/002 of 12 February 1999 on the animal health policy in the territory of the Republic of Togo; - Law No. 2004/020 of 30 September 2005 establishing the National Society of Veterinary Medicine of Togo.

Source: field data compiled by the consultant from nationals consultants' reports (2013).

Annex Table 13: Suggested projects and programmes in ECOWAS members' States

Countries	Projects/programmes	Budget (millions \$US)
Benin	Support Project of Development of breeding of large ruminants	140.97
	Support Project for the Development of small ruminant	8
	Support project for the development of sheep fattening	25
	Project of the Development of the pigs breeding	8,965
	Support project for the conservation of animal genetic resources	15,26
	Support project for the development of the production of pasteurized milk	50.88
	Support project for the improvement of manufacturing "Wagaashi" cheese and its labelling	0,63
	Total	249,7
Burkina Faso	Project of the development of the dairy industry in the dairy region of Bobo Dioulasso	100.00
	Project of the construction of a refrigerated slaughterhouse in Bobo Dioulasso and acquisition of mobile slaughterhouses	12.00
	Project of construction of the terminal market of Bobo Dioulasso and assembly markets	15.00
	Agricultural by-product valorization project	14.00
	Breeding project	30.00
	Project for the elaboration of credit policy	
	Project to strengthen the capacity of stakeholders	60.00
	Pastoral water project	400.00
	Project for the creation a stock of food security	20.00
	Total	651.00
Cabo Verde	Support programme for the institutional strengthening of the livestock sector	0.72
	Project for the strengthening of epidemiological surveillance and health monitoring	0.36
	Ruminant livestock performance improvement project	0.48
	"Improving the family pig farm" project	0.36
	Development program (processing and marketing) of animal products	0.80
	Total	2.72
Côte d'Ivoire	Program to strengthen the livestock / meat value chains	4.69
	Support Programme for the relaunch of the Milk Sector in Côte d'Ivoire	6.65
	Livestock Productivity Improvement and Commercialization Program (LPICP)	5.01
	Total	16.35
Gambia	Support project for enhancing the meat value chain	109.94
Ghana	Support project for enhancing the Milk Value Chain	57.54
Guinea	Development of small ruminant value chain project	20.78
	Development of bovine meat value chain project	27.30
	Development of the dairy value chain project	15.76
	Total	63.84

Countries	Projects/programmes	Budget (millions \$US)
Guinea Bissau	Programme for Institutional Strengthening of livestock sector	7.31
	Programme for the improvement of livestock statistics and communication	1.54
	Programme to improve animal health	4.56
	Support Programme for livestock values chains development	6.69
	Support programme for recovery of veterinary and livestock research	1.58
	Total	21.68
Mali	Promotion of livestock, meat and milk value chains project	169.53
Niger	Support programmes for the development of the livestock / meat value chains	63.79
	Support programmes for the development of the dairy value chain	24.25
	Total	88.04
Nigeria	Livestock/meat and Dairy Development Agenda (Mid-term: three to seven years) Projects:	691.74
	Livestock Database Project	
	Nigerian Green Field Project (Development of Commercial Hay Markets)	
	Establishment of Infrastructure for Young Farmers Club:	
	Livestock Business Advocacy Programme	
Senegal	Programme of the development of local livestock and meat value chains	29.50
	Development programme of the local dairy value chain	377.50
	Total	407.00
Sierra Leone	Livestock improvement project	50.00
	Renforcement du cadre politique/stratégique et réglementaire	0.50
	Total	50.50
Togo	Strengthening institutions and actors of meat and milk value chain project	0.68
	Supporting the development of milk and meat ESOP (inputs, processing methods, market access, and marketing).	3.00
	Support for bovine genetic improvement, the recapitalization of livestock and improved infrastructure for production, processing, conservation and marketing.	7.00
	Improving infrastructure for production, processing, conservation and marketing	70.00
	Total	80.68
ECOWAS ZONE		(2.71 billion \$US)
		2 710.76

Source: field data compiled by the consultant from national consultants' reports (2013)

