

Livestock and regional market in the Sahel and West Africa

Potentials and challenges



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Study carried out within ECOWAS Commission and SWAC/OECD
partnership on the future of livestock in the Sahel and West Africa

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Transformation du monde rural et développement durable en Afrique de l'Ouest
Rural Transformation and Sustainable Development in West Africa

This study falls within the framework of a joint ECOWAS - SWAC/OECD initiative in partnership with the CILSS, UEMOA and ROPPA.

It was carried out by a multidisciplinary team composed of:

Mulumba J.B. Kamuanga, PhD, Agricultural Economist, Co-ordinator of the study, former West Africa Regional Coordinator, Livestock Socio-economic Programme, International Livestock Research Institute (ILRI)

Jacques Somda, PhD, Livestock Economist, International Union for Conservation of Nature (UCN)

Yacouba Sanon, PhD (Doctorat unique), Agro-Livestock Technician, Sociologist, Expert at the Rural Agricultural and Development Departement, Economic Community of West African States (ECOWAS)

Hamade Kagoné, PhD, Agropastoral Expert, Institute for the Environment and Agricultural Research (INERA), Ouagadougou, Burkina Faso

Co-ordination:

Jean Sibiri Zoundi (sibirijean.zoundi@oecd.org), Head of the Rural Transformation and Sustainable Development Unit, Sahel and West Africa Club/OECD

Léonidas Hitimana (leonidas.hitimana@oecd.org), Agricultural Economist, Sahel and West Africa Club/OECD.

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Sahel and West Africa Club/OECD

4 boulevard des Iles

92130 Issy-les-Moulineaux

E-mail: swac.contact@oecd.org

Website: www.oecd.org/swac

Tel: + 33 (0)1 45 24 89 87

Fax: +33 (0)1 45 24 90 31

Postal address: 2, rue André Pascal, 75775 Paris Cedex 16, France





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PREFACE

Livestock rearing plays a key role in the economies of West African countries providing, at times, 44% of agricultural GDP. With 60 million heads of cattle and 160 small ruminants, 400 million poultry, the Sahel and West Africa is an exceptional region for livestock rearing. In numbers, and in comparison with the entire sub-Saharan Africa region, the Sahel and West Africa contain 25% of the cattle, 33% of the sheep, and 40% of the goats.

Livestock rearing is one of the main economic activities on which the poorest populations depend for food and income. It is also essential to ensure against vulnerability and

risk related to climatic conditions for populations highly dependent on rain-fed agriculture for their livelihoods.

However, this animal production potential is still under-exploited. This is illustrated by the region's persistent great dependence on extra-African imports for some animal products such as cattle meat, poultry pieces. As for dairy products, imports have doubled within 20 years, increasing from 223.7 million USD in 1984 to 529.4 million USD in 2004. Besides a loss of State revenue, these imports of animal products have been detrimental to the development of local production chains, notably in the dairy and poultry sectors. This situation intensifies the region's dependency.

Growing annually by 4%, the demand for animal products in the Sahel and West Africa should increase more than 250% by 2025. For now, the animal product supply growth rate is at 2%. This increase, although significant, does not satisfy demand. Statistics indicate that this imbalance between supply and demand will continue and worsen in the 2020s.

Besides improving productivity, livestock rearing in West Africa shall increasingly face policy and technical challenges. It is essential to support national and regional trade and agricultural policies that encourage the promotion of domestic animal product production.

Similarly, the agro-food processing industry should provide value added by creating supplementary jobs and generating more revenue for economic actors in the region. To this end, the professionalization of livestock actors should also integrate the challenges linked to sanitary regulations and quality standards, an essential element of the regional and international animal products market.

The aim of this joint ECOWAS Commission and Sahel and West Africa Club Secretariat (SWAC/OECD) initiative is to examine how livestock rearing could stimulate the West African agricultural and food products market by strengthening food and nutritional security on one hand and by contributing to poverty reduction on the other. This analysis is a contribution to the implementation of the Common Agricultural Policy (ECOWAP) adopted on 19 January 2005, notably concerning the specific objectives to: (i) reduce the region's dependency on imports by giving priority to local food production and its processing as well as capitalising on comparative advantages and complementarities between zones; (ii) to promote fair trade and the economic integration of farms in international, regional and national markets, and (iii) create employment by guaranteeing revenue pre- and post-production.

The current and future food and economic challenges require that particular attention be given to optimising livestock's potential in the region. This depends on preserving and improving the livelihoods of millions of the rural and urban population. We hope that the results of this analysis shall contribute to decision-making and action thus enabling States to respond to the major food security and nutritional concerns, improve poor populations' livelihoods, and reduce poverty in general.

**President of the ECOWAS
Commission**



Dr Mohamed Ibn CHAMBAS

**Director of the Sahel and West
Africa Club (SWAC/OECD)**



M. Normand LAUZON



EXECUTIVE SUMMARY

Analyses of policies in the livestock sector all agree that demand for animal products will rise in line with population growth, especially in view of rapid urbanisation. In the West Africa region, statistics also indicate a high demand for animal products both in the coastal countries described as consumption basins and in the Sahel countries described as production basins. This relative natural specialisation with regard to animal production has advantages for the development of intra-regional trade in animal products and therefore for regional integration. However, there remains the paradox of the ever-growing proportion of animal product imports from outside Africa, especially dairy products and poultry pieces. This situation raises several worrying questions for partners and actors in development of the livestock sector in the Sahel and West Africa (SWA) region, especially the following: How can the livestock sector become a driving force in strengthening the regional animal products market? How can the regional supply of

meat, dairy and other products be increased, and how can the regional trade in these products be boosted in response to the growing demand of towns? And what could the contribution of livestock rearing be to food security and poverty reduction?

The answers to these questions are complex and require in-depth consideration with the support of precise information on the state of the livestock sector in the region and its evolution over a fairly long period. The Sahel and West Africa Club (SWAC) and the Commission of the Economic Community of West African States (ECOWAS) have been engaged in this long-term process of strategic thinking, in strategic partnership with the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), the West African Economic and Monetary Union (UEMOA) and the Network of Farmers' and Agricultural Producers' Organisations of West Africa (ROPPA). This study is part of this strategic thinking to identify ways and means of enabling the livestock sector to play its role effectively as an engine of economic development in the individual countries and take part in the process of regional economic integration. The study was undertaken as part of the SWAC Secretariat's Potentials and Challenges of Livestock Rearing in West Africa Initiative and is intended as a contribution to the first two objectives of the Economic Community of West African States Agricultural Policy (ECOWAP), namely (1) implementation of an approach ensuring food sovereignty by reducing dependence on imports for food security, and (2) poverty reduction.

A multi-pronged methodology was needed to provide a participatory, analytical response to these concerns. Quantitative data were therefore obtained basically from available statistics on the SWA countries (FAOSTAT, official sources, objective estimates) and from regional and international institutions. Interviews were conducted with actors in the livestock sector in eight countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Nigeria and Senegal) representing the various livestock and animal product systems in the region. A data collection grid was designed for the purpose. Lastly, documents on production, marketing, processing and macroeconomic and sectoral policies were reviewed. The multi-functional nature of livestock rearing and the complexity of the concerns being addressed required the formation of a multi-disciplinary team comprising a socio-economist (the co-ordinator), a livestock economist, a social anthropologist and an agropastoral expert. The main results have been grouped into five chapters.

Chapter 2 examines the place and problems of the livestock sector in the SWA region. The share of animal production in agricultural GDP ranges from 5% in Côte d'Ivoire to 44% in Mali. In the countries of the Sahel the contribution of livestock to agricultural GDP is 40%. If labour and organic manure are counted as livestock products, the sector's contribution to agricultural GDP is nearly 50% for West Africa – and case studies in fact show that alongside livestock farmers and herders as such, traditional marketing channels dealing in animal products generate thousands of secondary jobs; in Burkina Faso, for example, these were estimated as the equivalent of 60 000 full-time jobs.

This large share of the livestock sector in GDP is due to the major livestock potential and genetic diversity found in West Africa. The region has about 25% of the cattle in sub-Saharan Africa, 33% of the sheep, 40% of the goats and 20% of the camels. Other herbivores (camelids), short-cycle animals (pigs, poultry) and various other species used as draught or pack animals (horses, donkeys, and camels) complete the animal stock of the region.

The failure to capitalise sufficiently on this potential because of inadequate policies has resulted in imbalances at several levels. First, at the regional level, animal production in the SWA countries is far from meeting a demand that is now growing at an estimated 4% a year. The second imbalance concerns the low level of trade in animal products among the various zones of the region, which could instead capitalise on their complementary assets in terms of geographical position or agroecological potential. The third imbalance concerns disparities between urban and rural areas. For the 11 SWA countries with comparable data, rural poverty (the percentage of inhabitants living on less than two dollars a day) averages out at 58% as against 35% in urban areas. Differences in income between town and country are also reflected in the consumption level of animal products. Styles of urban consumption are changing, with greater attention being paid to the health quality of food and a preference for “high-end” and standardised products.

The major challenges facing the livestock sector are discussed in Chapters 3 and 4. If the regional market in animal products is to be developed and stimulated, any action must be based on the complementarity between zones, exploiting the comparative advantages of the various blocs of SWA countries and judiciously applying the principle of subsidiarity. For starters, better knowledge of the various production systems is required, particularly their contributions to the supply of animal products and the nature of food resources. For example, pastoral systems account for a third of the cattle and half the small ruminants but supply 60% of cattle meat, 40% of small ruminant meat and 70% of milk. Agropastoral or mixed small farming systems are quickly gaining ground on purely pastoral systems, and it is becoming increasingly rare to find herders who do not practise at least some type of agriculture. The combination of agriculture and livestock rearing allows the recycling of nutrients, thus increasing the sustainability of systems and preserving the environment. Such systems contribute 35% of the total production of cattle meat, 20% of small ruminant meat, 35% of poultry meat, 40% of pig meat, 15% of milk and 10% of eggs. Despite their larger contribution to the overall supply of animal products in the SWA region, traditional extensive systems deserve improvement. Productivity is directly linked to the availability of grazing land, which governs the movement of herds and determines nomadic and transhumant modes of production. Livestock yields are still far from satisfactory; for example, young weaned cattle gain no more than 50 kg per year in the transhumant system, which means that it takes five or six years to produce a 250-kg animal.

Nevertheless, given the deteriorating living conditions of those involved in pastoralism, it is reasonable to question the future of this system. However, there is today almost nowhere in the Sahelian part of the SWA region where conditions could be found to feed and water hundreds of thousands of ruminants at all seasons – in other words, the necessary conditions for settling previously transhumant or nomadic livestock. Current changes in the environment thus do not allow any thought of halting transhumance, but call for more effort and imagination in adapting it. The implementation of actions to secure and sustainably manage pastoral resources by 2020 must be carried out both in Sahel countries and in host countries. The interests of extensive livestock systems and herders must be taken into account in any land-use plan.

The specific aptitudes of the various zones seem clearly defined. Sahel countries have conditions favourable to the extensive rearing of cattle and small ruminants, while the coastal countries, except for Nigeria, provide more pig farming products, producing 21% of the regional tonnage (330 097 t) in 2005. Inputs for short-cycle livestock and unconventional species are relatively abundant in some countries (Côte d'Ivoire, Ghana and Nigeria for poultry, both broilers and layers, Benin for cane-rats and Côte d'Ivoire for fish-farming). Nigeria is certainly the regional leader in egg production, accounting for 68% of produced tonnage.

Overall statistics for regional imports and exports do not allow a comparative analysis of intra- and extra-regional flows. However, the very low proportion of regional trade in international terms is clear. The region's rate of openness to the rest of the world is now 30%, six points less than the 1990 figure of 36%. The lack of national statistics on intra- and extra-regional trade hampers any in-depth analysis of changes that might be used as a planning tool. For example, Mali exported close to 6 500 t of live cattle to Senegal for an average annual value of CFAF 5.75 billion between 2000 and 2003. The corresponding figures for its trade with Côte d'Ivoire were 16 617 t and CFAF 11.84 billion.

Generally, traditional commodity chains still dominate flows of animal products. The failure of projects to modernise the cattle meat sector, and in particular the current difficulties in exporting carcasses from abattoirs (Burkina Faso and Niger), are in contrast with the efficiency of export chains for live cattle. The comparative natural advantages of the region are therefore poorly exploited and the regional supply of animal products still does not meet demand. Hence the need for a regional view that will take account of the potential and weaknesses of the various livestock systems within the SWA countries. Such a view must allow and encourage exporting countries to develop the live cattle trade, combined with modernisation of cattle meat chains for the export of meat to the coastal countries, as was the case of Niger with the Niger Company for the Exploitation of Animal Resources (SONERAN) in the 1990s. If national and regional policies seek to ensure the inhabitants' self-sufficiency in products of animal origin and obtain international market shares, policies should be implemented for short- and medium-term

intensification of agropastoral systems with a view to achieving more intensive systems in the long term.

In this process of transforming the livestock sector in the SWA region, the various social actors must be properly organised if any action carried out at the regional or national level is to be sustainable. However, analysis of the situation of actors and professionals in the sector (Chapter 5) highlights the constraints that must be removed if they are to participate effectively in the transformation process. Current weaknesses include: (1) their low level of financial independence, which makes them dependent on outside support to organise activities in favour of members – a situation prejudicial to the assumption of an independent position; (2) the poor organisation of actors at the regional level, inasmuch as the various countries do not have the same levels of organisation of actors directly involved in animal production chains; and (3) the absence of trading contracts among the actors in the various links in commodity chains, with the exception of certain chains (for example, modern poultry farming) and then only in certain countries (for example, Côte d'Ivoire).

Consistent policies are therefore needed in order to develop and stimulate regional trade in animal products. Analysis of policies (Chapter 6) shows that progress has been made in reconciling policies within the various countries of the region and that community actions are now being carried out. It is clear that if revitalisation of the livestock sector is to be sustainable and have positive effects, it must be made more economically profitable. Regional organisations can ensure such an increase in profitability, which will entail better organisation of production, modernisation of marketing channels, sustained support to development of the processing sector (ensuring added value) and professionals to invest in it. Similarly, research and development must play a determining role in developing and transferring technology. However, this will require the definition of research and development policies with a regional perspective, based on the strengths and weaknesses of livestock processing and marketing systems within the various countries in the region.

Regarding unexploited potential, the strategic view of the livestock sector in the SWA region must encompass the short term as well as the medium and long terms (Chapter 7). In the short term, strategic orientations must be based on the two main strategic animal products – meat and dairy products – in order to meet a demand of 3.5 million t for meat products (from cattle, small ruminants, poultry and pigs) and 4.5 million t for dairy products by 2015. A second short-term orientation will have to be the boosting of the contribution of the livestock sector to reducing poverty and food insecurity in the various countries. In the long term, the SWA countries must equip themselves with the necessary means of entering the world market in animal products by working towards compliance with health and phytosanitary standards for these products, thus establishing the conditions for fair competition among producers while protecting consumers from improper and dangerous practices.



I NTRODUCTION

With an estimated annual growth of 4%, the demand for animal products is destined to increase in sub-Saharan Africa, especially West Africa, by more than 250% by 2020 (Club du Sahel/OECD, 1998; Delgado *et al.*, 2001). This will result from population growth, accelerated urbanisation, growing incomes and consequently increased purchasing power of the populations. There was a temporary decrease in meat imports from outside Africa as a result of changes in trade policies over the past ten years at the international level, such as the Marrakesh Accords in 1994¹, and at the regional and national levels, such as the introduction of macroeconomic adjustment programmes leading to the devaluation of the CFA franc in 1994². This temporary situation created

¹ The new rules of the World Trade Organization (WTO), especially the section dealing with export subsidies, have led to a drop in European sales of beef and veal to African, Caribbean and Pacific countries (WTO, cited by Faivre Dupaigne *et al.*, 2006).

² The appearance of bovine spongiform encephalopathy (BSE) or “mad cow disease” has also had repercussions on the demand for European meat in African countries, contributing to the decline in imports.

real opportunities to satisfy the region's demand with local animal products at favourable prices. With more than 60 million head of cattle and 160 million small ruminants, and its agroecological diversity –subhumid and humid non-forested zones, semi-arid zones and Sahelian zones – West Africa offers great potential for increasing animal production and opportunities to optimise the role of cattle in reducing poverty.

In economic terms, livestock rearing plays a major role in household incomes, even if its contribution to West African national budgets is negligible and variable. With regard to poverty reduction, statistics (FAO, 2006) indicate that about 675 million of the world's rural poor, including nearly 170 million in sub-Saharan Africa, are entirely or partially dependent on livestock production to feed themselves or obtain financial remuneration.

1. The context of the study

Analysts of livestock sector policies agree that demand for animal products will grow in step with population growth, also taking accelerating urbanisation into account. Indeed, some experts go so far as to speak about a “livestock revolution” in the next 25 years, in view of this increase in production driven by the demand for animal products (Delgado *et al.*, 1999; 2001; FAO, 2002; 2005). Statistics for West Africa (FAO, 2005) also indicate a high demand for animal products, especially in coastal countries – 520 770 head of cattle for Benin, Côte d'Ivoire, Ghana, Nigeria and Togo combined. The most recent data on livestock production in three land-locked Sahel countries (Burkina Faso, Mali and Niger) reveal a total exploitable potential of 22.5 million head of cattle in 2005¹.

Although there are opportunities for the development of regional trade in meat, there is still the paradox of the ever-increasing imports of animal products from outside Africa, even if imports of meat from the European Union are tending to decline. For example, the proportion of imports of meat from outside Africa rose from 3% to 19% in Côte d'Ivoire between 1970 and 1999, and from 4% to 17% in Togo (Balami, 2003). In 2002, the Member States of the West African Economic and Monetary Union (UEMOA) imported 24 000 t of poultry meat at a cost of USD 58.8 million (Faivre Dupaigne *et al.*, 2006). Côte d'Ivoire alone imported 15 000 t of poultry meat in 2003, six times more than before UEMOA's implementation of the Common External Tariff (CET) (Faivre Dupaigne *et al.*, 2006).

With regard to dairy products, several programmes and projects have been designed for the peri-urban areas of certain towns in recent years, for example the Peri-urban Agricultural Development Project (PDAP) in Mali and the National Pilot Dairy Development Programme (PNPDL) in Burkina Faso. On the initiative of the West

¹ Burkina Faso 7.6 million (Ministry of Livestock Resources, 2006); Mali 7.5 million (Ministry of Livestock and Fisheries, 2005); Niger 7.4 million (Ministry of Livestock Resources, provisional results of the census, 2006).

and Central African Council for Agricultural Research and Development (CORAF/WECARD), a Competitive Fund has been set up to execute a research and development project focusing on market access and agricultural diversification in the UEMOA region, with the intent of making the dairy sector more competitive in a number of countries in the region and boosting regional integration. Despite these various efforts, imports of dairy products from outside Africa are increasing. In Burkina Faso, for example, such imports represented an average of CFAF 7 billion a year between 2000 and 2005 (MRA, 2004), while they represented CFAF 36.7 billion in Senegal in 2004 (Duteurtre, 2006), nearly CFAF 10 billion in Mali and CFAF 6 billion in Niger (MRA, 2005). Dairy products thus continue to swell import bills for food products in the SWA countries, depriving them of the possibility of investing in other economic sectors for the effective reduction of poverty and food insecurity.

The fact is that in many West African countries the favourable environment created with the introduction of such policies as those of structural adjustment has proved less beneficial to the livestock sector than to agriculture. The livestock sector receives little support in the form of public investment in processing and packaging infrastructure and lacks policies to stimulate regional trade in animal products.

However, there are some comparative natural – and exploitable – advantages among the countries of the region. Sahel countries have the twofold feature of an available surplus and a potential surplus in the production of domestic ruminants. The coastal countries are better endowed than those of the Sahel in terms of modern short-cycle livestock (poultry and pigs), especially in urban and peri-urban zones. In Côte d'Ivoire, for example, poultry farming supplies about 9 million broiler chickens and 3 million laying chickens a year, with a solid production base and locally supplied inputs¹. These countries also have considerable agropastoral resources due to good climatic conditions and could specialise in the production of such supplementary foods as cotton seed cakes, thereby increasing complementarity among the various West African zones. When stimulating trade (to be analysed below), Nigeria's importance must be noted, in as much as it constitutes a market accounting for nearly 55% of the international meat trade in the region (Renard *et al.*, 2004) and therefore has a determining influence on the livestock sector and the regional trade in animal products.

Apart from the main shortcomings of the region's livestock sector, it should also be recognised that some animal products imported from outside the continent are still heavily subsidised. It has been estimated that export subsidies for dairy products, beef and veal from the European Union and 12 other Organisation for Economic Co-operation and Development (OECD) countries totalled USD 2 384 million in 1998, almost half for dairy products (Williams *et al.*, 2004). West Africa is also facing a problem of competition in an increasingly globalised market. Some products, such as Asian poultry

¹ Verbal communication to the Mission of Experts at the Ministry of Animal Production and Fishery Resources in Abidjan, 15 September 2006.

and such by-products from its marketing as chicken wings and chucks and blades, are produced and marketed worldwide at very low cost. Imports from outside Africa are becoming more competitive than similar products from within the region. This situation is also a challenge for the development of the livestock sector. In the absence of effective measures to improve productivity and stimulate trade, it is feared that, despite the potential of its livestock sector, West Africa will find it hard to capitalise on the regional opportunities offered by a growing demand for food products of animal origin.

The present initiative of the Sahel and West Africa Club (SWAC) entitled “Potentials and Challenges of Livestock Rearing in West Africa”, carried out in strategic partnership with the Economic Community of West African States (ECOWAS), the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), UEMOA and the Network of Farmers’ and Agricultural Producers’ Organisations of West Africa (ROPPA), represents a contribution to strategic thinking on the questions raised by the many challenges facing the livestock sector in the regional trade in animal products, namely:

How can the livestock sector become an effective driving force in strengthening the regional market in animal products? How can the regional supply of meat, dairy and other products be increased, and how can the regional trade in these products be boosted in response to the growing demand of towns? And what could the contribution of the livestock sector be to food security and poverty reduction?

This regional strategic thinking is carried out within the overall framework of the questions posed by the SWAC Secretariat, the central one being:

Where and how are the 430 million inhabitants of West Africa going to live in 2020, considering that there were only 290 million of them in 2003?

2. ECOWAS in Brief¹

The Economic Community of West African States (ECOWAS) is a regional group of fifteen countries, founded in 1975. Its mission is to promote economic integration in “all fields of economic activity, particularly industry, transport, telecommunications, energy, agriculture, natural resources, commerce, monetary and financial questions, social and cultural matters”

The Institutions of the Economic Community of West African States (ECOWAS) are as follows:

- The Commission
- The Community Parliament
- The Community Court OF Justice
- ECOWAS Bank for Investment and Development (EBID).

¹ Free translation from the English version http://www.comm.ecowas.int/dept/index.php?id=p_pl_commission&lang=en

The Heads of State and Government broke with the past by their decision to transform the ECOWAS Secretariat into a Commission. The difference goes beyond a name change and an increase in the number of officers at the management level. After thirty years of existence, ECOWAS finds itself at a cross-road. At thirty, ECOWAS has come of age, is mature and master of its destiny.

Changes have already been underway with the support of development partners. These initiatives have been boosted by the Heads of State and Government when they endorsed institutional transformation covering all ECOWAS Institutions.

By implementing this transformation process which should reposition ECOWAS vis-à-vis the West African populations to whom pledges have been made, the leaders of our region have taken the destiny of their institution into their own hands. Indeed, by subscribing to the vision of the Founder-fathers of ECOWAS, they have taken ownership of the objectives designed to improve the living conditions of the citizenry, ensure economic growth and create an environment conducive to development and integration.

By becoming a Commission with enhanced powers and Commissioners in charge of smaller and clearly defined sectors, the ECOWAS Secretariat will have more impact and become more visible in Member States.

Regarding the Community Parliament, the restructuring is designed to make it more efficient by providing it with relevant management support. Similarly, the Community Court of Justice is being re-organised to have its judges also concentrate on their core competences.

The expected changes will not be possible without the support of the staff of our institutions. The task is huge; hence, the need for everyone to get involved in its implementation.

The Heads of State and Government urged every one of us to participate in the rebirth of our institution to ensure that development and integration soon become a reality.

Restructuring the Secretariat

Main Features ;

- To better adapt to the international environment.
- To play a more effective role in the integration and development process.
- A President, a Vice-President and 7 Commissioners.
- A smaller and more clearly defined sector for each Commissioner.
- Support to Member States to build their capacities for programme implementation.

- A predictable rotation system based on equity, transparency and functionality.
- Consequences of the restructuring process;

It is expected from this restructuring:

- Consolidation of the Community spirit.
- Enhancement of the powers of the Commission.
- Strengthening of supra-nationality.
- Adoption of a new legal regime (decisions directly applicable in Member States and by the Institutions).

New Regime for Community Acts

The transformation of the Secretariat into a Commission will be accompanied by a fundamental measure: the adoption of a new legal regime for Community Acts.

Until now obligations of member States were captured principally in Protocols and Conventions which are subject to lengthy Parliamentary ratification processes. These processes delayed the entry into force of the legal texts thereby paralyzing the integration process. Decisions of the Authority were however immediately applicable and binding on Member States, whilst those emanating from the Council of Ministers were only applicable and binding on the Community Institutions.

Under the new legal regime, the principle of supranational becomes more pre-eminent and there will be a de-emphasis on the adoption of Conventions and Protocols.

Community Acts will be Supplementary Acts, Regulations, Directives, Decisions, Recommendations and Opinion. Thus, the Authority passes Supplementary Acts to complete the Treaty. Supplementary Acts are binding on Member States and the institutions of the Community.

The Council of Ministers enacts Regulations and Directives and makes Decisions and Recommendations. Regulations have general application and all their provisions are enforceable and directly applicable in Member States. They are enforceable in the institutions of the Community. Decisions are enforceable in Member States and all designated therein. Directives and their objectives are binding on all Member States. The modalities for attaining such objectives are left to the discretion of States.

The Commission adopts Rules for the implementation of Acts enacted by Council. These Rules have the same legal force as Acts enacted by Council. The Commission makes recommendations and gives advice. Recommendations and advice are not enforceable.

3. The SWAC Secretariat/OECD

The Club du Sahel was created in 1976 on the initiative of OECD member countries, in liaison with the leaders of the countries of the Sahel, as a forum for discussion and advocacy of increased, sustainable support from the international community for the countries of the region, victims of drought. In 2001, the Club du Sahel's Strategy and Policy Group (SPG – equivalent to a board of directors) decided to extend its field of activities to the whole of West Africa in order to take account of complementarities and interdependencies between the Sahel and the other countries in the region. The Sahel Club thus became the Sahel and West Africa Club (SWAC), with activities covering the 15 countries of West Africa, plus Cameroon, Chad and Mauritania because of their geographical situation¹ (see Map 1).

Attached to the OECD, the SWAC Secretariat is composed of a technical team of about 20 people based in Paris and relies on a network of partners in West Africa and throughout the world. The Secretariat is financed by voluntary contributions coming from most OECD countries.

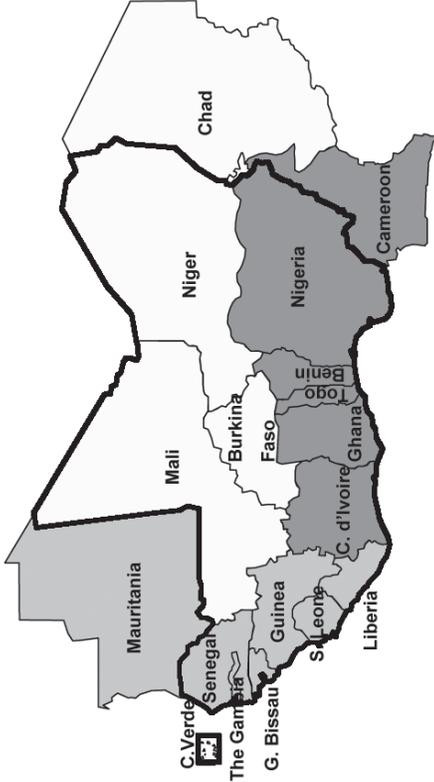
The Secretariat has its work plan approved by the SPG which is composed of representatives of contributing countries, together with representatives of the countries of the region and the main West African networks and partner institutions. The Strategy and Policy Group meets twice a year to examine progress on tasks undertaken by the Secretariat and approve its annual and multi-year work plans. It is chaired by a person nominated by its members for a specified period. As facilitator, stimulator and leader of open and constructive exchanges, the SWAC plays a bridging role and interface between regional actors and those of the OECD countries.

The SWAC Secretariat focuses its efforts on four main areas of interest to the region itself and the international community, with orientations that are also in keeping with concerns over the future of the region, particularly as expressed in the framework of the New Partnership for Africa's Development (NEPAD), the African Union and the partnership agreement recently concluded between the SWAC Secretariat and the ECOWAS Secretariat. The four main focuses of the SWAC Secretariat's work are thus:

- Medium- and long-term development perspectives.
- Rural transformation and sustainable development.
- Local development and the process of regional integration.
- Governance, conflict dynamics, peace and security.

¹ Hence the use in the present document of the term "countries of the SWA region", referring to all the countries within the SWAC's sphere of action.

West Africa



- Atlantic Front Countries
- Landlocked Countries
- Gulf of Guinea Countries
- ECOWAS

Source: SWAC

Map 1. Countries in the SWAC's field of action

	Land Area 1000 sq. km ²	Land Area %	Population 2004 Millions	Population 2004 %
Mauritania	1025	13%	3,0	1%
Cape Verde	4	0%	0,4	0%
Senegal	193	2%	10,9	4%
The Gambia	10	0%	1,5	1%
Guinea Bissau	28	0%	1,4	0%
Guinea	246	3%	9,3	3%
Sierra Leone	72	1%	5,9	2%
Liberia	96	1%	3,4	1%
Sub-Total	1674	22%	35,7	12%
Mali	1220	16%	12,0	4%
Burkina Faso	274	4%	13,6	5%
Niger	1267	16%	11,4	4%
Chad	1259	16%	9,5	3%
Sub-Total	4020	52%	46	16%
Côte d'Ivoire	318	4%	17,3	6%
Ghana	228	3%	20,8	7%
Togo	54	1%	5,6	2%
Benin	111	1%	7,2	3%
Nigeria	911	12%	137,0	48%
Cameroon	465	6%	16,1	6%
Sub-Total	2087	27%	204	71%
Total	7780	100%	286	100%

WAEMU member countries



CILSS member countries



4. Objectives and terms of reference of the study

This study has the overall objective of obtaining a clearer picture of the future of the livestock sector and its contribution to the regional economy (see Annex 1 for the terms of reference). The Potentials and Challenges for Livestock in West Africa Initiative is intended as a contribution to the two main objectives of the ECOWAP (CEDEAO, 2005), namely to implement an approach ensuring food sovereignty by reducing dependence on imports for food security, and to reduce poverty.

To achieve these objectives, a consultation commissioned by the SWAC Secretariat was held by a team of four experts, focusing its analysis on issues of regional importance for the SWA countries, grouping the issues around three main concerns:

- a. How to capitalise on the existing potential for the supply or production of animal products to stimulate a regional market in such products based on complementarities between zones, through an analysis of the potential and the constraints and challenges facing the livestock sector in the region.
- b. Analysis of the stakes and specific challenges linked to transhumant pastoralism in the region.
- c. Identification of relevant elements and prospects for the future of the livestock sector in terms of its contribution to poverty reduction, improvement in people's living conditions, food security etc.

5. Expected results

- a. A contribution to implementation of the Atlas on Regional Integration, produced jointly by the SWAC Secretariat and ECOWAS.
- b. Improved knowledge of existing livestock production systems, their potential, strong points and constraints.
- c. Knowledge and better evaluation of regional opportunities with regard to the trade in animal products and the region's participation in international trade.
- d. A contribution to strategic thinking on the strategic medium- and long-term view of the livestock sector in terms of the objectives and main pillars of the ECOWAP, especially with regard to food security, poverty reduction and the construction of a regional market in agricultural products.
- e. Improved awareness of State and non-State actors regarding the issues at stake in the livestock sector in the SWA region and the conditions for optimising and capitalising on such potential.
- f. Concrete proposals that could be used in decision-making at the regional and national levels.

6. Methodology of the consultation

A discussion meeting attended by SWAC experts and partners involved in the Potentials and Challenges for Livestock in West Africa Initiative was held in Ouagadougou (4–5 September 2006) to co-ordinate points of view, define the steps to be taken to obtain the products demanded and speed up preparations for field consultations. The multi-disciplinary nature of the team of experts (a socio-economist, a livestock economist, an agropastoral expert and a sociologist) was intended to boost functional complementarity in the analytical task and result in a consistent interdisciplinary product.

A data collection grid was drawn up and refined in collaboration with the SWAC Secretariat (August–September 2006) to be used as a guide in field consultations with the various target categories at national and regional levels (see Annex 2). Various institutions and structures were involved: technical ministries responsible for livestock issues in the individual countries, regional integration and development organisations, research and training centres and institutes, professional agricultural organisations, organisations of civil society actors and private operators (see Annex 3 for the list of institutions, operators and people met).

Documentary research was started with a review of the literature at various documentation centres and especially through the Internet.

Field missions were carried out from 5 to 21 September 2006 in some target Sahel countries (Burkina Faso, Mali, Niger and Senegal) and some coastal countries (Benin, Côte d'Ivoire, Ghana and Nigeria) to collect basic information from all the actors concerning the key issues of the study. Exchanges and discussions were organised with the ROPPA national platforms in the countries visited, but also with various actors in the livestock sector (herders, processors, private operators, etc.).

A three-day (22–25 September) brain-storming session of experts for the analysis, exploitation and sharing of the information collected was followed by a phase of individual work to produce complementary analyses and draft the Provisional Report.

CHAPTER ONE

THE PLACE AND PROBLEMS OF LIVESTOCK REARING IN THE WEST AFRICAN ECONOMY

1. An important sector for its contribution to job creation and national and personal income

Agriculture in the broader sense is especially important in the economies of West Africa, for example in the UEMOA zone (Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo) it contributes to 30% of GDP and employs 50% of the labour force (Renard *et al.*, 2004). In the land-locked Sahel countries that are net exporters in the central corridor of the SWA region, the contribution of the livestock sector to GDP ranges from 10% to 15% (MRA/Niger, 2001; MRA/Burkina Faso, 2005; MEP/Mali, 2004), but is lower in countries with seaboard (Senegal 8%, Ghana 9% and Togo 9%). In terms of agricultural GDP, the livestock sector plays a very important role, for the share of animal production ranges from 5% in Côte d'Ivoire to

44% in Mali, with an average of nearly 40% in Sahel countries. In Mauritania, although the livestock sector accounts for 15% of GDP, it contributes 80% of agricultural GDP. In Nigeria, the livestock sector seems to have declined: over the previous four years the agricultural sector accounted for 49% of GDP (in 2000), 13% of this from livestock, whereas in 2003 these proportions were no more than 35% and 3% respectively (Eboh *et al.*, 2004).

The contribution of the livestock sector to GDP would in fact be higher in West Africa if the value of animal traction and organic manure in mixed agriculture-livestock systems, which are widespread in the region, were also taken into account (Winrock International, 1992). Smith *et al.* (1996) show that if the labour force and organic manure were considered as livestock products, the contribution of the sector to agricultural GDP would rise from 25% to 35% for sub-Saharan Africa and to almost 50% for West Africa.

Agriculture in general and the livestock sector in particular provide 52.5% of jobs in West Africa as a whole. Various case studies show that in countries highly dependent on agriculture, *i.e.* where it accounts for more than 20% of GDP, overall economic growth can be closely correlated with that of agriculture. Thus a one-dollar increase in farm income corresponds to a two-dollar increase in the total income of the local economy (Delgado *at al.*, 1998). It is generally agreed that at least 50% of the cash income of mixed farmers in tropical Africa is derived from the sale of livestock products (Winrock International, 1992). Case studies also show that in West Africa 40% to 78% of the income of rural inhabitants, the main victims of poverty, is derived from agriculture (Reardon, 1997).

With regard to income distribution, it is important to note that investment in short-cycle livestock production, especially poultry, provides an income to more women in a number of countries on the Gulf of Guinea and some Sahel countries, with Senegal as the leader here. Major changes are under way in Burkina Faso (MRA, 1997) and Mali (MEP, 2004) with a view to developing the production of broiler chickens and eggs for consumption. These changes in short-cycle livestock systems exist alongside so-called traditional systems, which are also supported by national policies. This is true of traditional poultry farming, the main activity that generates a cash income chiefly for rural women.

Livestock rearing thus occupies an important place both in macroeconomic terms (contribution to GDP and job creation) and for strategic reasons of optimising the production environment:

- First, 38.2% of the SWA region is composed of arid zones that are unfavourable to the development of crop production. Livestock rearing is therefore the only way of optimising the fragile ecological zones inhabited by people who are vulnerable in terms of both income and food security.

- Second, livestock represent more than half the capital held by rural inhabitants in sub-Saharan Africa. The mixed agriculture-livestock production systems widely practised in the region improve the environment by reducing the effects of soil degradation, especially through the recycling of nutrients by domestic animals.
- Third, livestock rearing has significant spillover effects within the process of trade in animal products. Case studies reveal that alongside livestock farmers and herders as such, the traditional marketing channels connected with animal products generate thousands of secondary jobs; in Burkina Faso, for example, these have been estimated as the equivalent of 60 000 full-time jobs (FAO/CDI, 2003).

2. An important sector in terms of its potential

West African livestock potential is numerically great and very varied in its composition. The region has about 25% of the cattle, 33% of the sheep, 40% of the goats and 20% of the camels in sub-Saharan Africa as a whole (Camara, 2005; FAOSTAT, 2005). Other herbivores (camelids), short-cycle animals (pigs, poultry) and various other species used as draft animals (horses, donkeys) complete the animal stock of the SWA region. Various unconventional animals are also assuming increasing importance, but there are few statistics to support this.

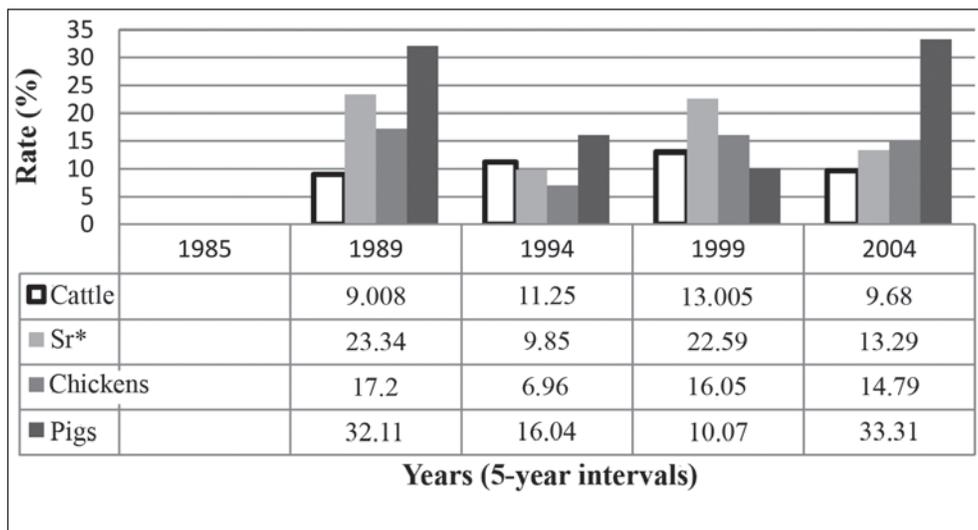
Table 1 gives approximate data on the main species reared and involved in trade dealings in the SWA region. It shows that Sahel countries have proportionately more ruminants than coastal countries. However, by force of numbers, Nigeria alone holds a predominant place in terms of ruminants by comparison with Sahel producers. On the other hand, the coastal countries and Nigeria have more monogastric livestock than the Sahel countries. While the Sahel countries' share of ruminants increased between 1985 and 2005, that of the coastal countries and Nigeria in particular declined.

With regard to poultry, the coastal countries, other than Nigeria, and the Sahel countries have increased their numbers, while Nigeria has been steadily losing its pre-eminent place since 1985. For pigs, the coastal countries have progressively lost their supremacy over the Sahel countries and Nigeria¹.

Viewed overall, the numbers of livestock reared in the SWA countries have gone through a variety of changes (see Figure 1). The highest growth rates in numbers were seen in pigs, with an average five-yearly growth rate of 23% between 1985 and 2005, giving an

¹ In the absence of any recent study, some hypotheses may be formulated as to factors that could explain this marked drop in pigs in the coastal countries. First, in the case of Sahel countries, it may be a matter of an improvement in data collection, which has given a clearer picture of the importance of this type of livestock. It may also be noted that interest in the Sahel in rearing monogastric livestock dates from the 1980s and that major projects to improve pig farming have been implemented. In the coastal countries, epidemics have contributed to a drop in the pig population, inasmuch as these countries already practised an improved rearing system with breeds that are less rustic than the local ones. Competition from Sahel countries may also have discouraged coastal farmers when their share of the market shrank.

average annual growth rate of 4.58% – higher than the world rate for the same period. Growth was highest in Burkina Faso (8.49%), Cape Verde (7.94%) and Nigeria (6%). Small ruminants had the second highest growth rate (an annual average of 3.45%). Chickens had an annual growth rate of 2.75% between 1984 and 2005, while cattle had an annual growth rate of 2.14%.



* Sr = Small ruminants

Source: calculated and adapted from FAOSTAT, 2005 (accessed on 12 September 2006).

Figure 1. Five-yearly changes in the growth rate of livestock rearing in the Sahel and West Africa region

It must also be noted that the growth is not regular but rather has low and high periods. In the case of pigs, for example, a five-yearly growth rate of 32% between 1984 and 1989 dropped to 16% between 1989 and 1994, then to 10% between 1994 and 1999, before rising to 33% between 1999 and 2004. This trend also applies to chickens. The various livestock diseases affecting monogastric animals in particular had a negative effect on the numerical growth of these species. The outbreak of swine fever in Côte d'Ivoire in 1996 can be sited as an example here. Growth in cattle numbers was low (9%) between 1985 and 1989 at the end of the last cycle of drought, but then reached 13% between 1999 and 2004.

West Africa contributes 23% of the continent's beef and veal production, with an estimated 919 500 t in 2005, *i.e.* 3.17 kg per inhabitant. Production has almost doubled since 1961, with an average annual growth rate of 2%. However, the growth was irregular over the period 1961–2005, as the region experienced a drop in production between 1971 and 1975 (–2.2%) and between 1986 and 1989 (–5.0%), in keeping with changes in livestock numbers. Although Nigeria produced 280 000 t of meat, or 33% of regional production in 2005, at country level this represented only 2.13 kg per inhabitant, a *per*

capita production lower than the regional average. In the Sahel countries, annual *per capita* beef and veal production is higher than in Nigeria (8 kg in Burkina Faso, 7 kg in Mali and 6 kg in Niger).

With regard to small ruminants, meat production is about 269 000 t for sheep (25% of African production) and 351 000 t for goats (44% of African production). Half of the African production of sheep meat comes from North Africa. Monogastric livestock rearing plays an important part in the economies of the coastal countries. In this regard, West Africa is the main pig meat producer on the continent, with Burkina Faso, Cameroon and Nigeria leading the way. Pig meat production has undergone major growth since 1980, rising from 106 000 t in that year to 330 000 t in 2005.

Apart from the numerical size of its animal resources, the SWA region is also recognised as a reservoir of great genetic diversity, with multi-functional livestock rearing. About 13 cattle breeds of the shorthorn type and 12 of the zebu type have been recorded, with varying zootechnical characteristics. For example, according to Missohou and Adakal (2004), shorthorn cattle have a live adult weight ranging from a minimum of 115 kg for a female of the Somba breed (Benin and Togo) to 750 kg for a male of the Kouri breed (Niger and Nigeria), while the live adult weight of zebu cattle ranges from an estimated 240 kg for a female of the Sokoto breed (Nigeria) to 660 kg for a male of the same breed. With regard to dairy production, fragmentary data (Gonçalves, 1995) reveal low yields (0.5–2 L per day), depending on the breed, style of livestock management and milking method, without specifying potential yields – although it is generally accepted that breeds yielding 0.5 L a day could produce more than 2 L with management and feed improvements (Agyemang *et al.*, 1997).

The intrinsic zootechnical characteristics of small ruminants, poultry and pigs are poorly documented, but their genetic diversity and the potential for increasing their meat yields – and/or milk yields in the case of sheep and goats (Gbangboche *et al.*, 2005) – are indisputable in the region.

The case of Niger is a good illustration of Sahel countries' natural advantage in rearing ruminants. With livestock of all species estimated at nearly 7.5 million tropical livestock units (TLUs)¹, for a total value of CFAF 706 billion and an annual production of CFAF 191.5 billion, giving an added value of CFAF 155 billion², Niger can thus be seen as a great livestock rearing country (see also Box 1). The countries of the SWA region clearly have major numerical, genetic and zootechnical potential. In contrast with this great potential, there is poor availability of meat and milk in the region, mainly because of insufficient exploitation of the potential in terms of yields and of policies that fail to take account of complementarities between zones.

¹ The tropical livestock unit is used to convert the weights of different species of livestock and corresponds to 250 kg of live weight.

² These figures are estimated on the basis of FAO data (2005).

Box 1. Niger's agropastoral potential

Niger enjoys a comparative natural advantage for the production of cattle and small ruminants for export to the coastal countries of the Gulf of Guinea and Central Africa. Livestock rearing is practised by almost 87% of the active population as their main activity, or secondary activity after agriculture. With a pastoral area estimated at 63 000 km² and a water-rich subsoil, the development of a small proportion of this land could already significantly increase both fodder and animal production. There is a very broad genetic potential composed of such highly productive bovine species as the Azawak zebu with its high milk yields, shorthorn cattle (Gouri) toward the Lake Chad area and the Bororo breed, which is well adapted to the arid environment of the Sabel. The know-how of Toubou, Arab and Fula herders is legendary and is a huge asset in maintaining the productivity of the various breeds of cattle. The small ruminants of Niger (Bali Bali sheep and Red Sokoto or Sabelian goats) are particularly appreciated not only in the SWA region but also in Central Africa and the Maghreb. The growing interest and organisational capacity of those involved in the beef and veal, leather and skins, dairy, and sheep subsectors are starting to be recognised within the regional trade in animal products. In view of the estimated 35% contribution of the livestock sector to agricultural GDP, the Government has recognised the sector's importance by upgrading it to a full ministry.

Statements gathered by the mission to Niamey (Ministry of Livestock Resources) on 18 September 2006.

3. Role of livestock in reducing poverty in West Africa and the Sahel

About 675 million poor rural people in the world (surviving on less than two dollars a day), nearly 170 million of them in sub-Saharan Africa, are wholly or partially dependent on livestock to feed themselves or as a source of income (FAO, 2006). Defined in this way, poverty is a widespread phenomenon in West Africa and the Sahel (Thornton et al., 2002). It is particularly a feature of certain Sahel countries (Burkina Faso, Mali, Niger) or coastal countries with a large rural population (Guinea) and with economies that are mainly dependent on agriculture and especially on livestock. In most of these countries, it affects more than 50% of the population.

Table 2 summarises the poverty situation in a sampling of representative countries in the SWA region. Even in countries where the poverty threshold is 50% or higher, livestock rearing is an important activity, as is the case in the Sahel countries, where the livestock sector is the first or second source of export revenue. Despite the insufficient exploitation of animal production livestock rearing plays a role in reducing poverty in the region. It also reveals a contradictory and abnormal situation. In a wider perspective, poverty is a phenomenon encompassing various dimensions of destitution linked to the inability to meet such human needs as consuming and being sure of food security, being in good health, being able to learn, being able to exercise the right to make one's voice

Table 2. Rural and urban poverty in 1999 in West Africa

Country	Rural poverty (% of inhabitants)	Urban poverty (% of inhabitants)
Burkina Faso	74.1	37.2
Côte d'Ivoire	36.4	30.3
The Gambia	69.1	37.5
Ghana	34.3	25.5
Guinea	72.2	44.1
Guinea Bissau	76.9	56.6
Mali	76.6	35.6
Mauritania	43.0	24.5
Niger	65.5	35.3
Nigeria	48.4	32.7
Senegal	40.6	23.5

Source: Renard *et al.*, 2004.

heard, living in security and dignity, and having a decent job¹ (OECD, 2001; Thornton *et al.*, 2002).

The role of livestock in reducing poverty should be strengthened, given its underexploited potential both in individual countries and in the SWA region as a whole.

The animal production potential discussed above plays a direct role in the process of socio-economic transformation and contributes to people's nutritional and food security in a number of ways. Livestock rearing as a productive activity is in line with that same dynamic of bringing men and women out of the vicious cycle of poverty that affects rural people in particular but increasingly also those in urban areas – or preventing them from falling back into it. Livestock production not only improves people's nutritional status, but above all it provides income to various groups on the fringe of African society through trade.

In general terms, livestock often constitute a reserve of wealth, steadily built up and used to counter risks of income loss and food insecurity. This savings and insurance function will remain important so long as the commercial financial system (banks and insurance companies) remains inaccessible to the majority of people. Urban livestock rearing, even on a small scale, is a supplementary source of income for people employed in jobs other than farming (traders, artisans, civil servants). Its contribution to household incomes is estimated as at least 25% (Wilson, 1995). Case studies show that livestock rearing

¹ As the late President Houphouët-Boigny of Côte d'Ivoire liked to say, "A hungry man is not a free man."

accounts for 34% of rural household incomes, as opposed to 14% for crop production (Zonon, 2004; CAPES, 2003). A survey of a number of mixed farmer-herders on the Mossi Plateau of Burkina Faso indicates the importance of income from livestock in rural people's lives (see Box 2). A survey of household budgets and consumption in Niger shows that the livestock sector contributes more than 15% to household budgets, while its contribution to meeting food needs is 25% (MRA, 2004). In the Sahelian zone of Senegal, Kelly *et al.* (1993) showed that the majority of poor rural households depend essentially on livestock for their income.

However, the role of animal products in reducing poverty, especially monetary poverty, varies from country to country. For example, poultry's contribution to livestock income is assessed at 49% in Benin and Senegal, and 56% in Côte d'Ivoire (UEMOA, 2002), while the contribution of milk is particularly high in the Sahel countries: 40% in Niger, 38% in Mali and 32% in Burkina Faso.

Livestock rearing distributes income to a large number of economic actors

Box 2. Role of livestock rearing according to a rural producer

This is basically what one interviewee said: "You know, our farming with hoes is a way of hiding shame. It's so you don't just sit at home every morning and become the laughing stock of the village. In fact, it's thanks to poultry, sheep and goats that I manage to feed my family and pay for school fees and even medical care. For example, when a member of my family is ill, I sell a sheep or a goat so that I can pay for fuel for the ambulance to take the person to a medical centre. When the children ask for school supplies, the solution's simple: I sell chickens or guinea-fowl." This testimony indicates that livestock rearing, especially of the barnyard type – which is so little discussed in studies – is the best way of bringing people out of the cycle of poverty (Sanon, 2003).

Similar statements were gathered during the present consultation in the southern region (Sikasso) of Mali and in Niger and Senegal.

Livestock rearing is a well-known source of employment. Dairy production in urban and rural areas is a labour-intensive activity. Milk and meat processing generate the highest levels of employment in the livestock sector. FAO (1994) estimates that for 30 head of cattle, the number of workdays needed for slaughtering, processing and marketing are respectively 20, 80 and 4. The equivalent figures for pigs are 10, 30 and 2.

Livestock rearing contributes to food and nutrition

Animal products play a direct and indirect role in reducing food insecurity. The intake rate of animal proteins in the daily diet is an important indicator of a country's development level, and also of a given group. Sasson's work (1986) shows that:

- The over-nourished consume 2 800 to 3 400 kcal and 50 to 70 g of animal protein per person per day.
- The well-nourished consume 2 800 to 3 400 kcal and 20 to 50 g of animal protein per person per day.

- The “intermediates” consume 2 400 to 2 800 kcal and 10 to 30 g of animal protein per person per day.
- The undernourished consume 2 000 to 2 800 kcal and 10 to 30 g of animal protein per person per day.
- The severely undernourished consume an average of 2 000 kcal and 5 g of animal protein per person per day and suffer from nutritional deficiencies.

In Africa the most widely consumed animal products are milk, meat and skins. For example, dried cattle skins produced in Niger are used for human consumption in Nigeria. Blood is consumed as a food in some pastoral communities in East Africa (Masai and Nuer). The minimum calories required by a 65-kg person in a situation of food security is 2 400 kcal (the norm established by FAO), generally supplied by cereals, roots and tubers. The daily animal protein requirement is at least 55 g for the well-nourished and about 17 g for the less affluent. Apart from rich people in urban centres and herders, communities involved in food production are far from reaching these minimums.

At the regional level, however, *per capita* daily consumption is about 2 320 kcal, which is lower than the FAO norm. Honfoga and van den Boom (2003) show that, on average, diets in the Sahel countries of West and Central Africa contain less than 2 200 kcal, compared with 2 500 kcal in the coastal countries. On the other hand, protein deficiency is more widespread in the coastal countries, where the typical diet contains only 45 g of protein, as against 60 g in the Sahel countries.

Livestock rearing is a driving force for agriculture

Livestock rearing has a determining role to play in increasing the yields of cereals and certain cash crops in the SWA region. Studies have shown that a family with a pair of oxen can cultivate two or three times more land than is possible with hand implements. Cattle also provide excellent fertilizer: on 1 ha of land, their manure can increase cereal yields by 25% (Harrisson, 1991). Other experiments spanning several years have shown that a farmer who works his land by hand can complete a year's full technical schedule on only 0.4 ha, whereas with the help of two oxen the area can be expanded to 5 ha (CIRAD, 1996).

There are also environmental advantages to mixed farming. Animal excreta help regenerate very fragile soils in several Sahel countries (Baumer, 1985). In the west of Burkina Faso (the cotton basin), the Action Plan and Investment Programme for the Livestock Farming Sector (PAPISE, 2005) reports that ownership of cattle allows the production of 1 to 2 t of manure per year per animal, depending on the length of time spent in stalls. For example, a pair of oxen kept in a pen at night produce the equivalent of two 50-kg bags of complete fertilizer (costing CFAF 12 500 per bag at 2004 prices) and double that with a manure stable, or enough to fertilize 1 ha of cotton or maize.

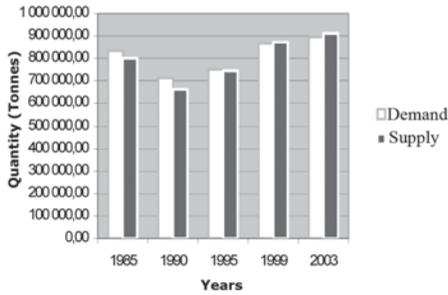
4. Worrying imbalances with regard to the “livestock revolution”

Worrying imbalances for development of the livestock sector with the intent of strengthening the regional market can be seen at several levels. The first imbalance is that between regional figures for the production – and therefore the supply – of animal products and the demand for these products. Examination of the available statistics for the three main products – meat, milk and eggs – reveals an overall shortfall during the past 20 years, although for certain products, such as small ruminant meat, production met nearly all the demand during the same period. Figure 2 shows the following trends: (1) The supply of beef and veal was lower than demand between 1985 and 1995; there was a slight improvement up to 2004, but not enough to establish a surplus over demand. (2) The supply of poultry and pig meat and dairy products was lower than demand over the whole 20 years. (3) Inasmuch as the supply of small ruminant meat and eggs was sufficient to meet demand, it was the regional imbalance between supply and demand of dairy products that most swelled the deficit in animal products. Historically, the regional supply of dairy products has never covered regional demand, which is still met by imports. The deficit in dairy products was about 1.3 million t between 1980 and 1990, but has seen an almost exponential growth since then. Projects do not forecast any reversal in this trend, and the deficit could reach 2.5 million t by 2015.

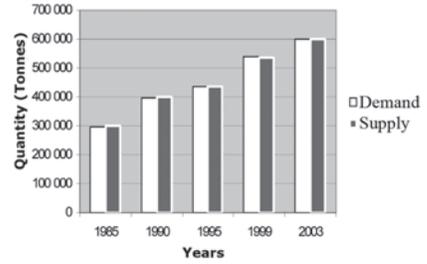
As stressed above, the growth in demand is partially a result of very rapid population growth and a high rate of urbanisation. The population of the region, which was about 220 million in 2000, will continue to increase, growing by about 100 million between now and 2015, 73 million of them urban and 38 million rural (FAOSTAT, 2003), thus accelerating the growth in demand. Of the countries with high population growth between 1960 and 1990, the coastal countries had a higher rate than the regional average, estimated at 2.7%, whereas the countries of the Sahel had a lower rate than the average.

Urban growth is 6%, and it is estimated that by 2020 there will be nine towns or urban municipalities with 2 to 4 million inhabitants or more, apart from Lagos and Abidjan, which will have 14 million and 9 million inhabitants respectively (Club du Sahel/OECD, 1998). In addition to population growth, especially in the coastal countries, which are net importers of animal products, income levels are also a factor stimulating demand (see Table 3). Analysis of income evolution in the various sectors of West African societies shows an overall rise in the gross regional product, with a 4.6% growth rate since 1990, compared with 3.6% between 1960 and 1990 (Club du Sahel/OECD, 1998).

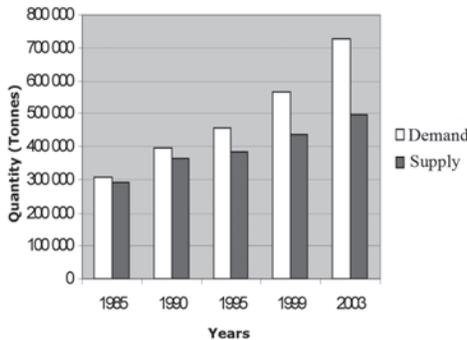
The second worrying imbalance concerns the low level of trade among the various zones of the region, which could have exploited complementarities based on their geographical position or agroecological potential. The three large blocs of countries in the SWAC Secretariat’s field of action – the countries of the Gulf of Guinea (Benin, Cameroon,



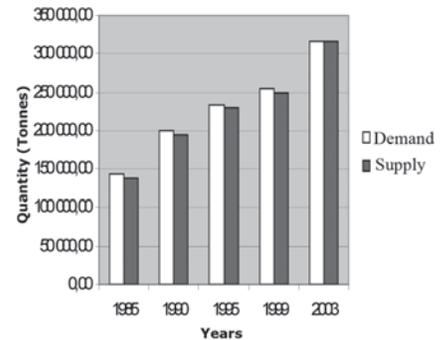
(a) Beef and veal



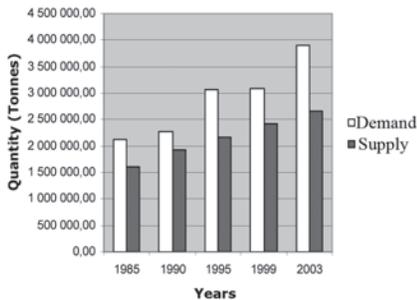
(b) Small ruminant meat



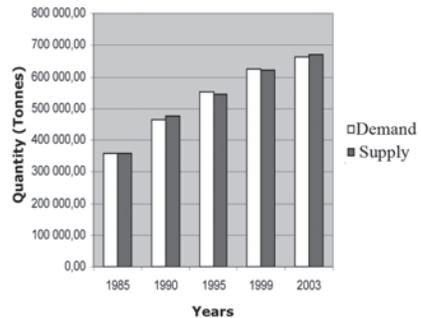
(c) Poultry meat



(d) Pig meat



(e) Dairy products



(f) Eggs

Figure 2. Evolution in regional supply and demand for animal products

Côte d'Ivoire, Ghana, Nigeria and Togo), the countries on the Atlantic seaboard (the Gambia, Guinea, Guinea Bissau, Liberia, Mauritania, Senegal and Sierra Leone) and the land-locked countries of the Sahel (Burkina Faso, Chad, Mali and Niger) – also have notable differences in their macroeconomic structures (see Table 3) (Sahel and West Africa

Club/OECD, 2005). Apart from Nigeria, the countries on the Gulf of Guinea are net importers of livestock products, those on the Atlantic seaboard trade very little amongst themselves, and the land-locked countries basically supply those on the Gulf of Guinea (except for Cameroon) with products from the beef and veal commodity chain.

The consumption of food products is also influenced by income. It has been seen in countries all over the world that the consumption of animal products increases when the average income increases. Delgado *et al.* (1999) have shown that for sub-Saharan Africa dairy products and sheep and pig meat have the highest elasticity in consumption in relation to total expenditure on animal products (see Table 4).

Table 3. Basic data for the countries of the Sahel and West Africa region in 2004

	Population (millions)	Growth rate (%) 1990-2000	Pastoral zones as % of agricultural land	Urbanisation (%)	<i>Per capita GDP (USD)</i>
Total SWA countries ^a	286.9	2.83	67.56	33.91	510.34
Criterion 1: Opening to the sea					
Gulf of Guinea ^b	204.0	2.55	54.0	33.47	642.70
Atlantic seaboard ^c	35.7	2.86	72.4	59.70	568.59
Land-locked countries ^d	46.0	3.10	76.3	23.04	310.62
Criterion 2: Agroclimatic					
Sahel ^e	56.9	2.90	75.1	26.50	332.00
Nigeria	137.0	2.80	54.4	36.60	694.00
Other coastal countries ^f	50.9	2.45	54.6	35.57	546.56

^a All the countries in the SWAC field of action, including Cameroon and Chad.

^b Benin, Cameroon, Côte d'Ivoire, Ghana, Nigeria and Togo.

^c Cape Verde, the Gambia, Guinea Bissau, Guinea, Liberia, Mauritania, Senegal and Sierra Leone.

^d Burkina Faso, Chad, Mali and Niger .

^e Burkina Faso, Chad, Mali, Niger and Senegal, .

^f Benin, Côte d'Ivoire, Ghana and Togo involved in trade in animal products with the Sahel.

Source: adapted from Club du Sahel/OECD, 1998; FAOSTAT, 2005; Economic and Monetary Community of Central Africa (EMCCA) Website: www.izf.net/izf/Guide/; OECD, 2005.

Table 4. Elasticity in consumption (in weight) in relation to total expenditure on animal products

Animal products	Countries with <i>per capita</i> GDP <USD800	Average sub-Saharan Africa	Countries with <i>per capita</i> GDP >USD3000
Beef and veal	0.72	0.65	0.57
Pig and sheep meat	0.96	1.10	1.30
Poultry meat	0.28	0.27	0.26
Milk	1.43	1.36	1.26

Source: Delgado *et al.*, 1999.

This elasticity has been estimated for a large number of countries on several continents and the figures therefore do not allow a precise appreciation of the dynamics of animal products consumption in the SWA region – and even less that of individual countries in the region. However, it may be noted that the countries of the SWA region belong to the category of those in which *per capita* GDP is lower than USD 800. In such countries, milk consumption is the most sensitive to variations in average income, followed by pig and sheep meat, then beef and veal, and lastly poultry meat.

The third type of imbalance concerns disparities between rural and urban areas. As with differences in income between countries (in terms of *per capita* GDP), differences in income between urban and rural areas also affect the consumption of animal products. Population growth has been higher in African towns than in rural areas, a trend that should continue in the decades ahead. Many authors (Delgado *et al.*, 1999; Huang and Bouis, 1996) stress the fact that urban consumers diversify their diet as a result of the wider choice offered and exposure to more varied cultural influences. They consume more animal products than rural consumers. Case studies (Thillier-Cedan and Bricas, 1997) also show that the proportion of food expenditure allocated to animal products reaches 30.8% in such urban areas as Cotonou. Food expenditure accounts for 46% of the total outgoings of urban households. Urban styles of consumption are also changing, with more attention paid to the health quality of food and a preference for high-end and standardised products. The growing globalisation of markets and rapid urbanisation also encourage the development of “supermarketisation” and market segmentation (Randolph *et al.*, 2004), which means that a growing proportion of urban inhabitants, even those with modest incomes, buy more animal products in urban supermarkets, at the expense of raw products sold in public places and often consumed by the poorest strata of society.

Urbanisation has a very strong influence on the nature of marketing channels, inasmuch as urban consumption is mainly supplied by commodity chains, whereas rural consumption is essentially accounted for by household production and gifts or is supplied by very short channels (direct sale from producer to consumer). Urban growth will therefore increase the need for longer commodity marketing chains, which will be in direct competition with import chains, since most large West African towns are ports – and, although the Sahel countries are land-locked, they have easy access to ports in the coastal countries.

5. Key questions concerning livestock in the Sahel and West Africa region

How can the comparative natural advantage of the Sahel countries in animal production be best transformed into an economic advantage by strengthening trade with the coastal countries where regional consumption of meat products is mainly concentrated, stimulated by higher *per capita* incomes? Would it not also be beneficial to develop the fodder potential of the reception zones of transhumant herds in the coastal countries by promoting careers in livestock fattening and the livestock feed industry?

Population growth and urbanisation in the region will modify food habits towards a greater consumption of animal products and will be determining factors in the growth of demand for these products. Even if *per capita* consumption remained at the current level – extremely low compared with dietary needs – the overall demand would still grow considerably. If, in a more optimistic scenario, economic development raises *per capita* income to levels closer to those in other parts of the world, the demand for animal products will grow even faster. What regional solutions can be recommended to raise the current level of trade, increase the rate of cover¹ of requirements by animal production in the countries of the SWA region, and reduce imports from outside Africa? What national and regional policies should be implemented to achieve regional integration by stimulating markets in animal products?

¹ The rate of cover is the proportion of consumption needs covered by local or regional production.

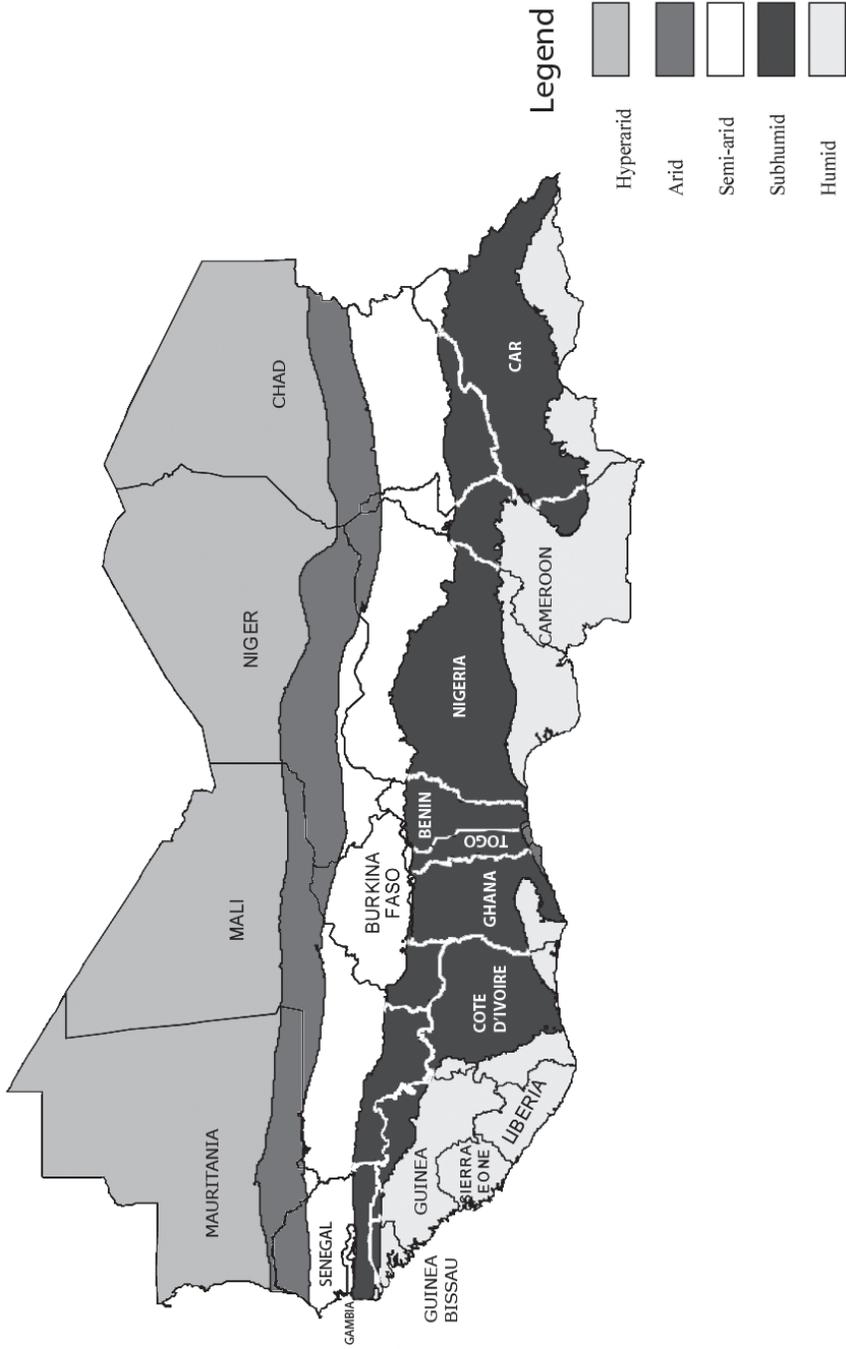
CHAPTER TWO

OPTIMISATION AND STIMULATION OF THE REGIONAL MARKET IN ANIMAL PRODUCTS

It is important to note that exploitation of the above-mentioned comparative advantages of the various blocs of SWA countries can be an effective contribution to stimulating trade, especially through the application of the principle of subsidiarity. A better knowledge of the potential, constraints and challenges of the various production systems is therefore needed in order to aid strategic thinking on the future of the livestock sector.

1. Production systems in the region

For the purposes of the present study, a livestock system is defined as a body of farms or livestock undertakings characterised by a similar complement of natural resources, having the same types of livestock production and household resources, and facing the



Thornton et al., 2002 ; Kruska et al., 2003

Map 2. Agroecological zones in West Africa

same constraints, so that similar development and intervention strategies can be applied to them (Dixon *et al.*, 2001). At the regional level, it is useful to refer to livestock systems first according to their agroecological zone, as seen on the map (Map 1). The countries of the SWAC Secretariat's field of action are thus divided into arid, semi-arid, sub-humid and humid zones, defined according to the length of the growing period and rainfall. The classification of livestock systems devised by Seré *et al.* (1996) recognises this agroecological potential as a major criterion in distinguishing among the various mixed agriculture-livestock systems that are fairly widespread in West Africa. Other relevant criteria may be progressively added in order to take account of human and livestock population densities – which are often correlated in rural areas (Thornton *et al.*, 2002; Kruska *et al.*, 2003).

Using these criteria, it was then possible to draw up a classification of livestock systems with simultaneous possibilities of identifying development priorities on the regional or even national level (Fernandez *et al.*, 2004). More recently, work carried out by the International Institute of Tropical Agriculture (IITA) to map cropping systems in West and Central Africa expanded the field of classification criteria by incorporating various types of crop (annual and permanent) into the detailed chart of mixed agriculture-livestock systems (Manyong, 2002). Access to Sahelian ponds, lowlands and river valleys was also taken into account as an important element in the yearly grazing chain, especially for the use of surface water and dry-season fodder reserves (flood plains), so that certain mixed systems, such as rice and livestock, could be identified. Boutonnet *et al.* (2000) distinguish four livestock systems on the basis of the nature of the livestock's food resources, highlighting the “barnyard systems” that are rarely mentioned in other writings¹. Analysis of the relevance of the criteria mentioned above led to the adoption of the classification proposed by Fernandez-Rivera *et al.* (2004) (see Figure 5) for a reading of livestock systems that tallies with the needs of this study.

1.1 Pastoral systems

Animal production depends essentially on the use of natural resources – grassland and shrubland – grazed by livestock on uncultivated land mainly in the arid and semi-arid zones of Burkina Faso, Mali and Niger, stretching as far as the Atlantic seaboard in the north of Senegal and Mauritania. Livestock are reared in mixed or unmixed herds of cattle, sheep, goats, camelids, donkeys and horses. With regard to cattle, the zebu genotype is predominant in these systems and is sometimes the only breed. The main constraints are concerned with land tenure, ownership rights and the scarcity of fodder resources.

¹ These are systems practised by farmers in all rural zones and by small livestock farmers in urban settings. They are a variation on the mixed agriculture-livestock system, costing very little in work, space and inputs, but providing a practically free supplement to the diet of families practising them. According to Thuillier-Cerdan and Bricas (1998), 10% of the urban consumption of poultry, eggs, and sheep and goat meat in Cotonou comes from these systems.

In traditional extensive systems the availability of grazing dictates the herd movements that distinguish nomadic or transhumant production systems¹. Livestock yields are still unsatisfactory. For example, young weaned cattle do not exceed an annual weight gain of 50 kg in the transhumant system, so it takes five to six years to produce a 250-kg cow (Touré, 1996). Dairy production occupies a central place in the management of these systems (Ancey, 1998), because the group can subsist on self-production or by trading milk or butter. It seems that the conditions of balance of these systems hamper any large-scale marketing of dairy products (Brokken and Senait, 1992). However, in some zones, such as Chad, these systems have been the source of a considerable dairy trade, for example, the trans-Sahara trade in clarified butter in the early 20th century (Duteurte, 1998). Although the sale of live animals is not the main aim of this system, it is the primary source of cash income. The trade involves only culled animals or those surpluses to the family's milk needs and the reproduction of the herd.

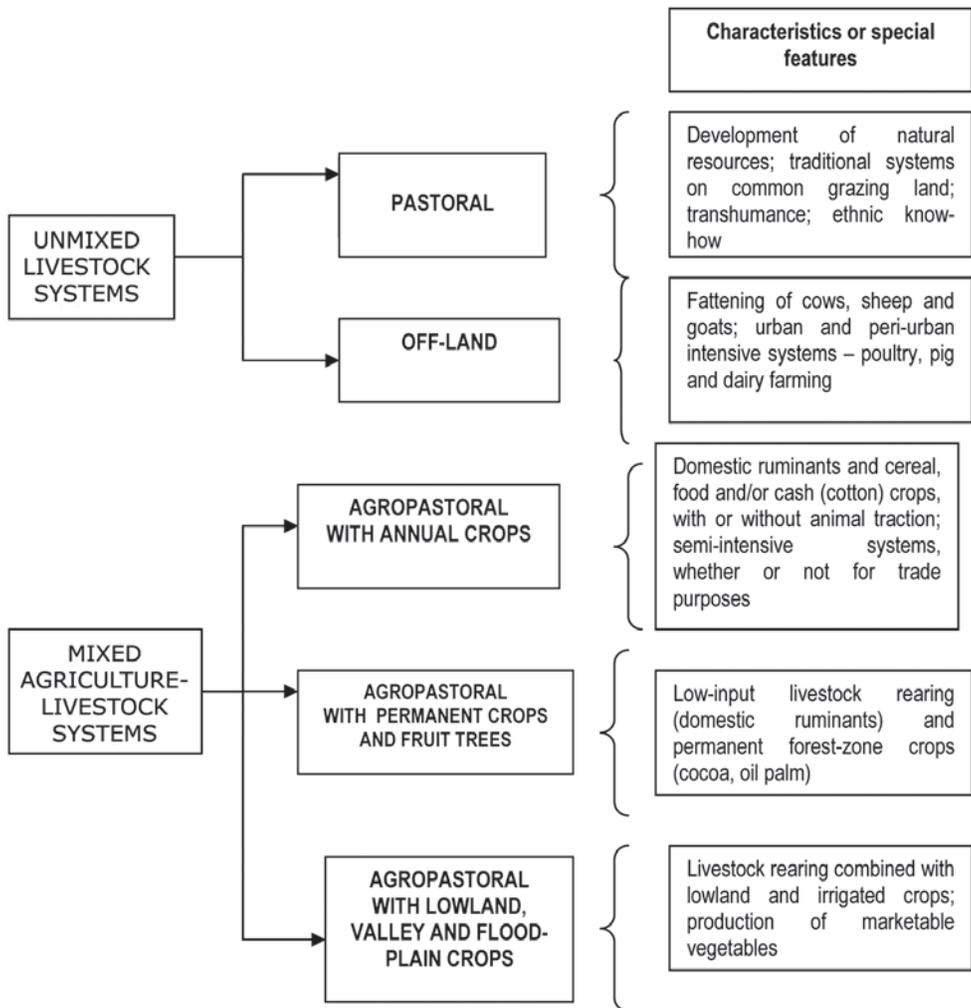
Attempts to improve the pastoral system by settling herders in the region have met with limited success. An example is the work carried out by the Animal Development and Production Agency (SODEPRA) in northern Côte d'Ivoire, where the settled rearing of cattle classified in the primary, "zero level", group involved 65% of production units in the 1990s. This livestock system was characterised by such features as (1) numerical weakness of individual production units, (2) grouping of animals in collective pens and management by a paid herdsman and (3) owners' lack of technical skills and infrequent guidelines and interventions on the herd. In Burkina Faso, the creation of agropastoral zones (Sideradougou, Smorogouan and Yallé) was one of the Government's responses to the successive droughts during the 1970s and 1980s, encouraging herders to settle in reception zones equipped with infrastructure to increase the productivity of their livestock. However, in these two examples, sustainable pastoral development could not be envisaged in the zones in question without addressing the fresh problems of the risk and prevalence of animal trypanosomosis.

According to Seré (1994), pastoral systems account for a third of the cattle and half the small ruminants in sub-Saharan Africa, providing 60% of the beef and veal, 40% of the small ruminant meat and 70% of the milk in these countries as a whole.

A participatory approach to environmental management and the improvement in herd health and livestock yields seems to be the way forward with a view to sustainable production that would benefit from the establishment of fodder reserves.

The ranching system is distinguished from pastoralism by the private or State ownership of rangelands. Meat production for sale is usually the sole objective of these enterprises and dairy production is absent (Boutonnet, 2000). Ranching is very rare in West Africa,

¹ Transhumance is defined as an oscillating, seasonal movement of livestock under the care of herders, following precise routes in order to exploit pastoral resources. It is distinguished from nomadism, which is characterised by more random movements and is followed by the herder's whole family.



Source: adapted from Fernandez-Rivera *et al.*, 2004.

Figure 3. Livestock systems practised in the countries of the SWAC's field of action

apart from a few cases where the objective is often that of developing and promoting one breed on the part of the State; examples are the Marahoué ranch in Côte d'Ivoire, the Madina-Diassa ranch in Mali and the Toukounous ranch in Niger to exploit the genetic potential of the Azawak zebu.

1.2 Off-land systems

Off-land systems are totally independent of any agricultural use of the land and are the second type of unmixed livestock rearing system. They use only animal feed: cultivated fodder and agro-industrial by-products, whether concentrated or unrefined – cereals, oil seed cakes, bran, hay and straw.

These systems are found in or on the outskirts of towns, and have blossomed in the past 25 years in the wake of growing urbanisation and a demand for animal products that distant small farming or pastoral systems are unable to meet, in view of the shortcomings of long marketing channels. They focus mainly on poultry farming (for eggs and meat), pig farming, and milk production to a lesser extent. In the latter case they are mostly trade-oriented systems, the most frequent being family or collective milk-production units and fattening enterprises. Animal production is covered by the use of exotic breeds and their crosses, which are more productive than local genotypes. Systems for fattening thin sheep and cattle coming from pastoral systems operate in the same way in urban and peri-urban locations.

Modern poultry and pig farming is generally carried on in close association with western companies, which supply feed formulas and ready-mixed feed, chicks or breeding sows and chickens, advice and testing. This industry is expanding in the coastal countries, especially Côte d'Ivoire and Senegal¹. Traditional (off-land) poultry farming is also expanding. Villagers and small-scale herders in urban areas practice off-land barnyard systems to rear chickens and guinea-fowl. Productivity should increase with health care, predator control and a reduction in seasonal stress, while improved feeding should produce better quality carcasses. These systems cannot produce more than available food supplies allow, and their performance can be improved only by eliminating such major health constraints as Newcastle disease and avian flu in the case of poultry and African swine fever in the case of pigs.

Off-land dairy production systems are cost-effective only because of African consumers' preference for fresh milk and the lack of longer marketing channels to supply towns from small-scale dairy farmers, whose production costs are lower. The economic viability of peri-urban dairy farms is often ensured by the sale of brood heifers bred from exotic (imported) stock. In-depth socio-economic surveys in the peri-urban areas of the region have recently shown the very low profitability of this type of system (Hamadou and Tiendrebeogo, 2004; Hamadou *et al.*, 2002; 2003).

Intensive cattle fattening in permanent stalls, using purchased concentrated feed and fodder, was fairly widespread in Africa in the 1970s, but has been practically abandoned since then.

1.3 Agropastoral systems

Also called mixed farming systems, these are the most widespread as they dominate the landscape in the sub-humid savannah zones of the countries of the SWAC's field of action. Agropastoral systems use a combination of grazing on uncultivated land, fodder

¹ More than 200 000 breeding birds were recorded in Côte d'Ivoire in 2006 (verbal communication to the Mission of Experts at the Ministry of Animal Production and Fisheries on 14 September 2006). Senegal also has the capacity to produce 4 million day-old chicks and 1.3 million broilers per year (DIREL, 2005).

crops, agricultural and agro-industrial by-products and purchased feed, in a mixed multi-crop and livestock farming system.

By combining agriculture and livestock rearing for household consumption and sale, these systems have seen major growth as a result of demographic pressure. Several authors, especially Seré (1994) and Bonfiglioli (1992), note the expansion of agropastoral systems at the expense of purely pastoral systems. It is increasingly rare to find herders who do not practise a certain amount of agriculture. When associated with agriculture, livestock rearing provides manure and traction, as well as a reserve of capital, which is indispensable in places where the banking network is absent and the currency weak. Herds of cattle owned either individually or collectively are managed by paid herdsman. As Figure 3 shows, these systems are very varied and sedentary, and may be based on (1) annual crops – for food, sale or export, (2) permanent crops – cocoa, fruit, banana etc., or (3) farming of lowlands, river valleys and flood plains.

For lack of a regular outlet, dairy production is in general only a secondary product. It sometimes helps to pay for salaried herders. Beef and veal production is only a by-product of the above activities, while that of other species is intended mainly for household consumption.

The combination of agriculture and livestock rearing received a boost with the introduction and expansion of animal traction, especially where it is associated with cotton growing, which has become the driving force of agricultural development in the savannah zones of the region (Kamuanga, 2002). Development of the zones managed by the Malian Textile Development Company (CMDT) in Mali, the Burkina Textile and Fibre Company (SOFITEX) in Burkina Faso, the Regional Action Centre for Rural Development (CARDER) in Benin, the Ivorian Textile Development Company (CIDT) in Côte d'Ivoire and the Cotton Development Corporation (SODECOTON) in northern Cameroon are notable examples of this. However, the sustainability of mixed agriculture-livestock systems also requires the introduction of fodder crops, thereby reducing dependence on the cattle feed market. Fodder plants have been popularised over the past 25 years in different forms – rangeland improvement, fodder banks, erosion control measures, permanent pastures – albeit with uneven development and limited success (Bosma *et al.*, 1996). The main problem is still that of the effective adoption of fodder crops as an integral component of cropping systems.

It should be noted that the decrease in cattle productivity in agropastoral systems is affected by several factors, including (1) the intensity or frequency of the practice of transhumance (for example in northern Côte d'Ivoire: Kamuanga *et al.*, 2004), (2) the effectiveness and optimal use of trypanocides (for example in Burkina Faso: Ouédraogo *et al.*, 2006), (3) the reduction in pastures due to the expansion of crops and other types of land-use, and (4) the breed composition and mode of herd management (Tano *et al.*, 2001). Herd composition is often characterised by the presence of trypano-tolerant

cattle – N’Dama, Baoulé and their crosses (Lobi country in Burkina Faso and Tammari country in Togo and Benin) – alongside zebus, which are more susceptible to animal trypanosomosis.

In conclusion, pastoral and agropastoral systems in the SWA region still contribute more than 80% of the supply of animal products (PROCORDEL, 2005). In sub-Saharan Africa as a whole, the production of mixed agriculture-livestock systems represents 35% of total beef and veal production, 20% of small ruminant meat production, 35% of poultry meat production, 40% of pig meat production, 15% of milk production and 10% of egg production.

1.4 Note on unconventional livestock

The rearing of cane-rats, snails, rabbits and ostriches, fish-farming etc. are starting to expand in West Africa. Despite the lack of reliable statistics, it can be seen that the coastal countries are ahead of those of the Sahel. For example, domestication of cane-rats began over 25 years ago in Ghana and is now expanding in Benin, with about 19 000 animals (Mensah, 2000, cited by Jori and Chardonnet, 2001). There are about 500 private cane-rat farms in Benin, and many also exist in Côte d’Ivoire. Burkina Faso is the only Sahel country to launch itself into this field in implementation of its wildlife management policy. Its contribution to the supply of animal products in the region is still very small, despite the fact that it could help improve the supply to towns. The constraints on this type of production are linked to the scarcity of investment capital.

2. A regional view of livestock development: potential and aptitude of the various zones

The aptitude of the various zones within a country or group of countries in the SWA region determines the framework and opportunities for profitable trade with a view to development of the animal product market. These opportunities depend initially on the productivity level of the livestock systems allowed by the agroecological potential of each zone. They also depend on how the economic environment evolves and on the existence of the political will to implement appropriate decisions to stimulate the intra-regional market in animal products.

2.1 Some basic data with regard to the SWA livestock sector: ecological diversity and livestock potential

There is a broad difference in productivity between all domesticated breeds reared in tropical countries, sub-Saharan Africa in particular, and those reared in temperate countries in the north. The typical values of productivity parameters for cattle under traditional systems are given in Table 5, divided according to type of production system. These values are average for sub-Saharan Africa and have certainly undergone changes.

For cattle, small ruminants, pigs and poultry, the levels of the parameters described are valid and applicable to the livestock systems practised in all the countries in the SWAC's field of action.

With regard to cattle, the birth weight of a calf in industrialised countries is about 40 kg, as compared with 15 to 25 kg depending on the particular breed of zebu in SWA countries. The adult weight of a dairy cow in industrialised countries is between 550 and 750 kg, as compared with 250 kg for most West African zebus and 300 kg for Azawaks in the Sahel zone. Moreover, for African breeds, age at first calving is about 45 months, although it is higher in traditional pastoral systems (49 months) and lower in agropastoral systems in subhumid zones (39 months). By comparison, the age at first calving is 24 to 30 months in temperate countries. Inasmuch as the interval between calvings is

Table 5. Some parameters of cattle productivity under traditional livestock systems in sub-Saharan Africa^{a,c}

<i>Parameter</i>	<i>Production system^b</i>			
	Arid zone pastoral	Semi- arid zone pastoral	Semi- arid zone agropastoral	Sub-humid zone agropastoral
Calf mortality (%)	23.1	20.7	22.3	21.1
Cow mortality (%)	8.2	6.2	6.4	4.2
Age at first calving (months)	49.0	47.4	48.4	39.4
Calving rate (%)	61.0	58.2	60.0	57.4
Interval between calvings				
Milk production/Lactation (kg)	251.0	282.0	218.0	233.0
Exploitation rate (%) ^c	11.7	10.2	9.0	6.9
Adult cow live weight (kg)	246.0	239.0	256.0	205.0
Bull live weight (kg)	322.0	326.0	324.0	Nd

a. Values have been adjusted to reflect those of livestock systems in the SWA countries.

b. Proportion of production exploited in proportion to total production at a given date. At herd level, this encompasses net marketable output (sales, gifts, emergency slaughtering, minus purchases and gifts received).

c. Source: adapted from Otte and Chilonda (2002), Livestock Information Sector Analysis and Policy Branch, FAO, 2002.

also longer in the SWA region (17 months on average, as against 13 in Europe), overall reproductive performances are considerably lower, while mortality rates are in general very high in traditional systems – an average of 22% for pastoral and agropastoral systems taken together.

In traditional pastoral and agropastoral systems, productivity by weight is 7 to 14 kg per year for cattle and 3 to 6 kg for small ruminants (Touré, 1996). Productivity of labour, expressed in tropical livestock units (TLUs) per worker, can drop to 3 in arid zones. It is

about 8 in Mauritania and 12 in Somalia, while it is 80 on modern ranches in Botswana and 300 to 800 in Australia (Brokken and Senait, 1992).

Traditional African pastoral systems thus require considerable labour – and labour is plentiful but poorly paid. All this results in an overall numerically low productivity, although this is partially offset by a greater longevity of livestock in tropical areas (the rate of culling for females is often lower in the tropics compared with temperate regions).

However, the greatest difference is found with milk production. In France, for example, the average production of the Prim-Holstein breed is 7 340 kg of milk per lactation, whereas the recorded production of the African zebu ranges from 200 to 1 600 kg (Touré, 1996; Meyer and Denis, 1999). However, there are considerable variations from one country to another.

For small ruminants, there is already a difference in terms of productivity between pastoral and agropastoral systems, depending on the availability of fodder in the various agroecological zones¹. For sheep, the age at first lambing ranges from 11.5 to 13 months for Djallonké ewes in humid and subhumid zones to an average of 16 months in Sudano-Sahelian zones, where there is a large seasonal variation in the biomass in natural rangelands. The average interval between lambings is slightly shorter in humid and subhumid zones (8.4 months) than in Sudano-Sahelian and Sahelian zones (10.1 months). The fertility rate ranges from 68% to 167% for Djallonké ewes and 103% to 109% for Oudah ewes. Djallonké ewes have greater fecundity than those of Sahelian breeds: 101% to 131% as against 82.5% to 116% for Oudah ewes.

As with sheep, goats in humid and subhumid zones mature earlier than those in arid and semi-arid zones. The average interval between births, estimated at 9.9 months, is slightly shorter for dwarf goats reared in humid and subhumid zones than for those reared in arid and semi-arid zones. Dwarf goats are more prolific than Sahelian goats: 165.8% as against 122%. Taking all breeds together, the fertility rate ranges from 70% to 125% and the fecundity rate from 90% to 180%.

The difference is even more noticeable for small ruminants when African productivity is compared with that of countries of the north. The weight of a Djallonké goat in West Africa is on average a third that of an Alpine goat, and its milk production is insignificant compared with the 700 L of the French breed. Comparable differences are found between Djallonké sheep and Arles merinos, for example.

With regard to pigs, a newborn Large White piglet weights 40% more than an African piglet, while an adult sow weighs four to ten times as much. Similarly, reproduction performances of African breeds (size of litters and interval between litters) are often a third lower or even half those of European breeds.

¹ These data are taken mainly from the Final Report of PROCORDEL, 2005.

In traditional poultry rearing, local chickens lay their first eggs at 19 to 25 weeks (*i.e.* 4.5 to 6 months). The variation is a result of differences and lack of regularity in rearing conditions. Laying performances of local chickens vary as widely as their rearing conditions. When ranging freely, they lay 40 to 50 eggs a year, but in improved rearing conditions, they can lay 80 to 100 eggs a year. When eggs are systematically gathered, this improves laying intensity by disturbing the cycle of laying-incubation-rearing of chicks normally followed by local chickens. Most of the eggs laid by local chickens are of the white-shelled Leghorn type, although eggs with off-white or pale coloured shells are also found. Their weight steadily increases with laying cycles, increasing from less than 20 g to more than 40 g (with 32 g as the average). The average hatching rate of 68% can rise to nearly 90% in the rainy season or fall to 50% in the dry season. However, about 10.7% of hatchlings die within 24 hours for various reasons, such as the poor characteristics of the eggs from which they have hatched. There is no selection of eggs before incubation, so that the weight of eggs and therefore that of chicks vary considerably, ranging from 21 to 30 g.

For all the productivity parameters described above, only the average values have been given, masking considerable variations both within and between systems. Overall, however, there are clearly large differences in productivity, which can be attributed particularly to genetic factors, inasmuch as the pressure of selection for any species has always been weaker in sub-Saharan countries because of the multi-purpose nature of tropical domestic species, which has governed the choice of breeding stock. Health pressure (parasites, major infectious diseases, dietary deficiencies) is by and large much stronger in tropical countries. The limiting factor in pastoral and agropastoral systems is still food.

It is certainly wiser to intervene on all the factors involved, taking them as a whole and aiming not so much at a productivity level equal to that of the countries of the north but rather at the acquisition of a balanced potential for species capable of producing sufficient meat, milk and eggs, while optimising the meagre food available and resisting diseases and climatic conditions. In other words, a potential for improving livestock productivity in the SWA countries does exist, but it is at present smothered by a raft of ecological, technical, socio-economic and agricultural policy constraints. There are real possibilities of overcoming these constraints, taking a certain number of strong points for each zone into account. Inasmuch as food is the limiting factor, a regional approach must address the problem, considering such questions as: Is it better to develop cotton cakes – a rare source of protein – produced in Bobo-Dioulasso to maintain extensive livestock in the dry season, produce milk near Ouagadougou, or intensify poultry farming on the outskirts of Abidjan or traditional pig farming in Ghana?

2.2 Exploiting the comparative advantages of each zone: a necessary approach to stimulate the regional market

Analysis of the distribution of quantities of the main animal products available in the SWA region (see Table 6) clearly identifies the comparative advantages of the Sahel countries and those of the coast. By considering Nigeria separately, it is easier to see its demographic and economic weight, thus enabling its potential for animal production to be taken into account. Liberalisation is certainly important, but it must be based on more efficient production systems (enhancing production capacities, increasing supply, improving the business environment etc.) and on the particular advantages of each country taken individually within the perspective of regional complementarities.

Countries in the arid and semi-arid zone (land-locked Sahel countries and those of the Atlantic seaboard)

The main comparative advantage of the arid, semi-arid and subhumid regions concerns animal production intended primarily for the regional market and mainly involving cattle and small ruminants. The target countries are members of CILSS: Burkina Faso, Cape Verde, Chad, the Gambia, Guinea Bissau, Mali, Mauritania, Niger and Senegal. Niger, which produced a little more than 30% of the 921 508 t of beef and veal produced in the SWA region in 2005, should also be included, since this production came mainly from the semi-arid north of the country. Despite a general shift of herds towards the coastal countries because of the drought cycles of the 1970s and 1980s, the Sahel countries still have a quantitative advantage in terms both of numbers and of meat production (43.4% for beef and veal and 46.9% for small ruminant meat).

Since 1985, meat production has followed trends similar to the numbers seen in Table 1. Mali, the main producer, provides almost one third of the meat produced in the central basin (Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger and Togo), both for cattle and goats. Burkina Faso and Senegal account for about 16% each, followed by Niger with 13%. In 2005, the SWA countries produced 2.74 million t of milk, 70% of it in the Sahel.

The poultry sector is composed of traditional poultry rearing practised mainly in rural areas and modern poultry rearing which is showing signs of developing into an automated industry. Nigeria alone accounts for more than 40% of poultry production in the SWA countries. Senegal has the largest share of production capacity among the Atlantic seaboard countries, accounting for 80% of poultry meat production, while Burkina Faso and Mali have the largest share in the central basin (70%). In the case of Mali, 96% of the total number (23 million birds) comes from the traditional sector. Burkina Faso's traditional sector is a major economic asset for the State in terms of foreign currency earnings – CFAF 1.2 billion in 2003 solely from sales to Côte d'Ivoire (Faivre Dupaigne *et al.*, 2006). The modern poultry sector has developed since the 1980s, expanding

Table 6. Distribution of animal product production in the Sahel and West Africa region

Year	1985	1989	1994	1999	2004	2005
Cattle meat						
SWA (1000 t)	800.163	642.503	743.600	873.455	909.355	921.508
Sahel share (% SWA)	25.90	41.30	40.15	40.56	42.98	43.36
Coastal share (% SWA)	19.39	24.84	24.30	25.32	26.23	26.25
Nigeria share (% SWA)	54.70	33.85	35.54	34.11	30.79	30.38
Small ruminant meat						
SWA (1000 t)	299.681	391.874	428.846	536.492	615.794	622.873
Sahel share (% SWA)	44.55	44.38	45.29	44.98	46.57	46.90
Coastal share (% SWA)	15.46	15.20	14.62	13.50	14.27	14.39
Nigeria share (% SWA)	39.98	40.40	40.08	41.51	39.14	38.70
Milk						
SWA (1000 t)	1,615.691	1,863.210	2,115.388	2,414.105	2,702.306	2,742.714
Sahel share (% SWA)	65.02	65.89	66.20	68.43	68.92	69.19
Coastal share (% SWA)	15.85	15.91	15.82	15.58	15.08	15.05
Nigeria share (% SWA)	19.12	18.19	17.96	15.98	15.98	15.75
Poultry meat						
SWA (1000 t)	289.527	350.149	378.145	434.995	520.126	524.735
Sahel share (% SWA)	22.97	23.76	25.62	26.19	25.08	25.46
Coastal share (% SWA)	29.76	28.01	29.98	34.29	34.07	34.05
Nigeria share (% SWA)	47.266	48.22	44.38	39.50	40.84	40.48
Pig meat						
SWA (1000 t)	137.456	199.616	215.329	249.527	327.117	330.097
Sahel share (% SWA)	32.58	22.85	22.26	17.47	15.74	15.85
Coastal share (% SWA)	23.25	19.66	21.31	21.21	20.60	21.07
Nigeria share (% SWA)	44.16	57.48	56.42	61.31	63.65	63.07
Eggs						
SWA (1000 t)	357.592	362.997	570.008	620.570	694.492	699.868
Sahel share (% SWA)	13.55	15.37	13.58	14.00	14.71	15.18
Coastal share (% SWA)	16.53	17.68	13.08	15.89	16.74	16.79
Nigeria share (% SWA)	69.91	66.94	73.33	70.09	68.53	68.01

Source: calculated on the basis of FAOSTAT data (accessed on 21 September 2006).

especially in certain Sahel countries on the Atlantic seaboard, such as Senegal, where it accounts for a little more than 9% of agricultural GDP.

In conclusion, the countries of the Sahel have a favourable set of factors for extensive cattle and small ruminant rearing. If there are natural limits to the expansion of this

type of livestock rearing based on grazing land and agricultural residues, they have not yet been reached, except in years of major drought. Moreover, economic analysis indicates the cost-effectiveness of more intensive fattening programmes, using by-products, fodder cereals or other fodder crops. There is also major potential for strengthening the links between agriculture and livestock rearing in the Sahelian part of the SWA region.

Countries in the humid and subhumid coastal zone (Gulf of Guinea and Atlantic seaboard)

This zone comprises Benin, Cameroon, Côte d'Ivoire, Ghana, Guinea, Liberia, Sierra Leone and Togo. The main comparative advantage of the humid coastal zone is its crop and forest production. These products are sold on national, regional and international markets. Recent developments in rural production activities have shown that these countries also have advantages for undertaking off-land activities involving the modern rearing of laying chickens and broilers, pig farming, unconventional livestock rearing (cane-rats, fish-farming etc.). Between 1985 and 2005, total poultry meat production in the region almost doubled, rising from 289 527 to 524 7835 t, 34% of it coming from the coastal countries, excluding Nigeria. The Côte d'Ivoire poultry sector is the most structured in the UEMOA subregion, with an integrated commodity chain stretching from poultry feed production through to a poultry slaughtering unit, and more than 200 000 breeding chickens recorded. Today Côte d'Ivoire has a modern industry that provides about 8 million broilers and 3 million laying chickens a year. Moreover, the sector is run by experienced producers with a solid production base and locally available inputs¹. Ghana also has potential for short-cycle livestock rearing. In particular, the current development of modern poultry farming enterprises shows that Ghana can become a net exporter over the next 20 years².

The coastal countries, excluding Nigeria, supply a much larger proportion of pig products, producing 21% of the regional tonnage in 2005 (330 097 t). Inputs for the rearing of short-cycle species and unconventional species are relatively abundant in such countries as Côte d'Ivoire, Ghana and Nigeria for egg and meat poultry farming, Benin for cane-rat rearing and Côte d'Ivoire for fish-farming. The proportion of poultry numbers and also of poultry meat production in the coastal countries, excluding Nigeria, increased from 30% in 1985 to 34% in 2005. In Nigeria, there was a considerable decrease from 47% to 40% over the same period, although the country is still the undisputed regional leader in egg production, with 68% of the tonnage produced.

¹ Verbal communication to the Mission of Experts, Ministry of Animal Production and Fisheries, 14 September 2006.

² Verbal communication to the Mission of Experts, Directorate of Animal Production, Ministry of Food and Agriculture, 10 September 2006.

Regional aptitudes: food opportunities, markets and health environment of animal production

The opportunities offered by a regional view of complementarities and possible trade are summarised in Table 7. Despite the scarcity of statistics on certain aspects of the livestock sector, a qualitative examination of the aptitudes and conditions of the environment indicates the existence of food opportunities to be exploited as well as the potential for trade in a regional approach to livestock development in the SWA countries. The

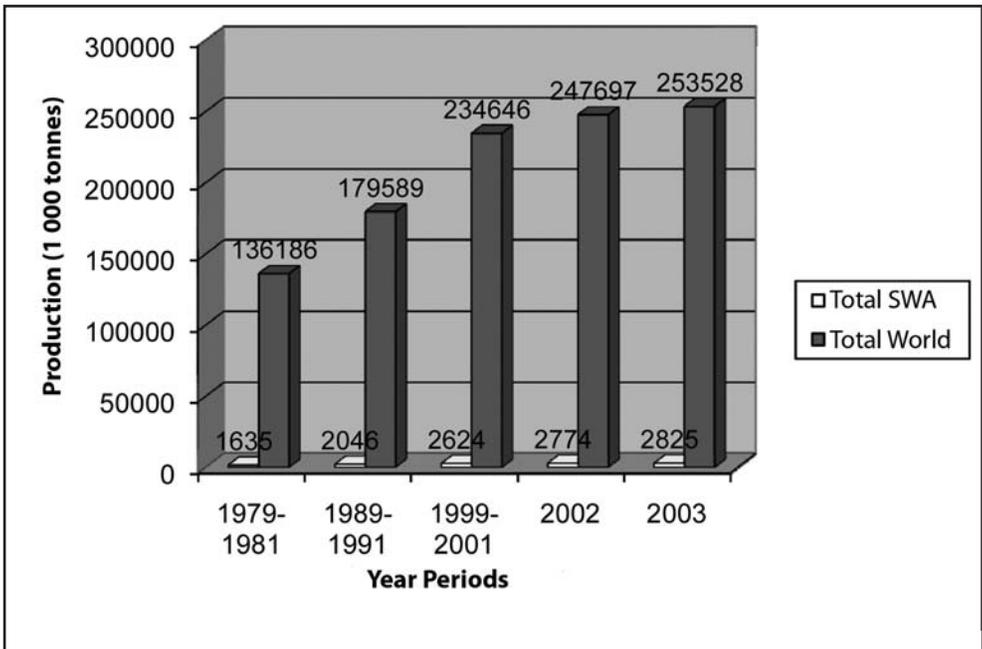
Table 7. Comparative natural advantages of the various groups of countries in the Sahel and West Africa region

		Sahel and West Africa zones		
		Sahel countries	Coastal countries	Nigeria
Food opportunities	Fodder	Fairly unfavourable ecoclimatic environment	Favourable ecoclimatic environment	Favourable ecoclimatic environment
	AIBP ^a	Underdeveloped agro-industrial environment	Fairly developed agro-industrial environment	Well developed agro-industrial environment
	ABP ^b	Fairly favourable agroclimatic environment	More favourable agroclimatic environment	More favourable agroclimatic environment
Diseases	Trypanosomosis	Fairly favourable	More favourable	More favourable
	Other diseases	Fairly favourable	Fairly favourable	Fairly favourable
Markets	Meat	Large	Very large	Very large
	Milk	Very large	Very large	Very large
	Eggs	Very large	Very large	Very large
Other opportunities	Costs of exports to outside Africa	Very high	High	High
	Water resources	Small	Very large	Very large
	Production of veterinary products	Small	Fairly large	Fairly large

Notes: ^a AIBP = agro-industrial by-products

^b ABP = agricultural by-products

geographical distribution of ecoclimatic advantages indicates disparities in fodder assets among Sahel countries, coastal countries and Nigeria. Similarly, the agro-industrial fabric of the various countries suggests disparities in the availability of agro-industrial by-products. Several other factors, such as diseases, market size, the costs of exporting outside Africa and the availability of water, favour regional exploitation of comparative advantages and complementarities among the countries of the region.



Source: FAOSTAT, various years.

Figure 4. Comparative evolution of world and SWA meat production

The situation therefore needs strengthening by developing socially acceptable models of access to available rangelands in the savannah zones in the north of the coastal countries. The northern regions of Côte d'Ivoire and Ghana, for example, could serve as fattening zones for ruminants from the Sahel¹. Young animals could thus be prepared for slaughter with a period of fattening. Those involved would need proper training in new livestock rearing technologies. Marketing infrastructure for cattle and meat products would also require development.

This is especially true of the Abidjan and Accra abattoirs, which need considerably greater investment than the simple cost of rehabilitation, if their capacity is to be expanded to cover an anticipated increase and more regular supply of live animals from the Sahel and fattening zones². The other coastal countries, which are no better equipped with modern abattoirs large enough to meet regional requirements, can also anticipate this type of investment, to the extent that local consumption allows.

¹ The mission was amply informed about this option during consultations in the two countries. Studies will also be undertaken on this subject in Nigeria with a view to establishing grazing areas for transhumant herders' (both nationals' and non-nationals') livestock.

² Verbal communication to the Mission of Experts, Ministry of Animal Production and Fisheries, Abidjan, 15 September 2006, and Directorate of Animal Production, Accra, 10 September 2006.

3. Regional trade in animal products: constraints and opportunities for its development

What balance between supply and demand can be envisaged and what forecast can be made, taking into account demographic factors, urbanisation and consumers' requirements, with a view to stimulating regional trade in animal products? It is also up to each country or group of countries to promote the allocation of human, financial and physical resources to turning comparative natural advantages into comparative economic advantages. Analysis of the facts and development of a regional view will provide indications regarding the evolution, constraints and opportunities regarding the supply and demand of animal products.

3.1 A weak showing in terms of world supply, but increasing tonnages

Compared to the world meat supply, which grew by 86% between 1979 and 2003 to 253.5 million t, the production of the SWA region grew by only 73% over the same period, reaching 2.8 million t. This tonnage represents only 1.1% of world meat production, 0.1% less than the percentage for 1979-81 (see Figure 4). This downward trend in comparison with world supply is an indication of the increased flows of meat imports into the SWA region, partly as a result of demographic growth and urbanisation¹.

Comparative data for world production and SWA production and also those for the contributions of each subzone over the period 1979-81 to 2003 show that there was a steady growth in meat production in the SWA region – from 1.6 million t to about 3 million t. The share of the Sahel in SWA meat production grew from 19% to 33% over the same period, a gain of four points in 24 years, while the Nigerian share, assessed at 41% in 1979-81, fell by 4%, while the other coastal countries maintained their share. Taken overall, meat production is increasing in the study zone.

3.2 Overview of recent developments in regional trade²

The analysis of statistics is initially based on overall data for regional exports and imports, even though these do not allow a distinction between intra- and extra-regional trade. Figure 7 shows developments in the SWA countries' trade in animal products. That trade is dominated by live animals rather than processed products. The region is a net importer of meat, dairy products and eggs. Data on the trade in eggs and dairy products within the region must be treated with caution, for these items are often in fact

¹ Exports of beef and veal to the world market reached 6 million t in 2003, i.e. about 12% of world production. It is useful to note the special importance of certain exporting countries such as Brazil, which holds first place with 1.2 million t of beef and veal, when this country exported nearly 500 000 t to the world in 1999.

² FAOSTAT is the main source of overall data, which do not distinguish the volumes traded within the SWA region from those traded with regions outside Africa.

re-exported from the coastal countries to those in the interior. The region as a whole is a net importer of meat (from cattle, small ruminants, pigs and poultry) for an estimated value of USD 166.5 million in 1994 (FAO, 2001).

In 2003, meat, dairy products and egg exports made a timid appearance as exports (see Figures 7b and 7c). The region offers a different picture in terms of trade in live animals, which is more substantial. It is thus an overall net exporter of ruminants (see Figures 7d and 7e), although it is a net importer of pigs and poultry (see Figures 7f and 7g). The overall trend and the volume of trade in live animals were declining up to 2003, while trade in small ruminants was increasing. Although imports of sheep and pig meat and eggs seem negligible, there was a definite upward trend between 1980 and 2003. The decline in exports despite the increase in animal production is additional proof of the growing demand within the region. On the other hand, the decline in imports would point to their high prices and thus their drain on foreign currency reserves and the balance of trade.

The evolution of intra- and extra-regional trade is linked to a total rate of openness of 39%, which is very close to the 1990 figure, according to the Club du Sahel/OECD (1998). However, the regional rate of openness to the rest of the world is estimated at 30%, or six points less than the 1990 figure of 36%. Regional trade would thus account for 22% of total imports, or 13 points more than the 1990 figure. Generally speaking, the tonnages of all animal products traded are steadily increasing, despite their very low volumes in proportion to world levels.

3.3. Intra-regional trade could be intensified in view of potential

Three major traditional trading basins for animal products have existed for a long time, with flows going from the Sahel to coastal countries. This age-old trading tradition within the region has survived many socio-political and economic changes, primarily because of the intermingling of the various peoples there, and led the national governments to undertake the formal establishment of such community areas as ECOWAS and UEMOA.

Analysis of the physical trade flows in the region shows a certain interdependence between the Sahel countries and those of the coast: flows of cereals (in certain periods) and starchy products primarily move northwards from the coastal countries, while those of older animal products move in the opposite direction.

Before evaluating the conditions for any intensification of trade within the region, it will be helpful to define the three recognised trading basins (Boutonnet *et al.*, 2000; Williams *et al.*, 2004; Renard *et al.*, 2004):

- The first trading basin comprises the countries on the Atlantic seaboard – Cape Verde, the Gambia, Guinea Bissau, Guinea, Liberia, Mauritania, Senegal and

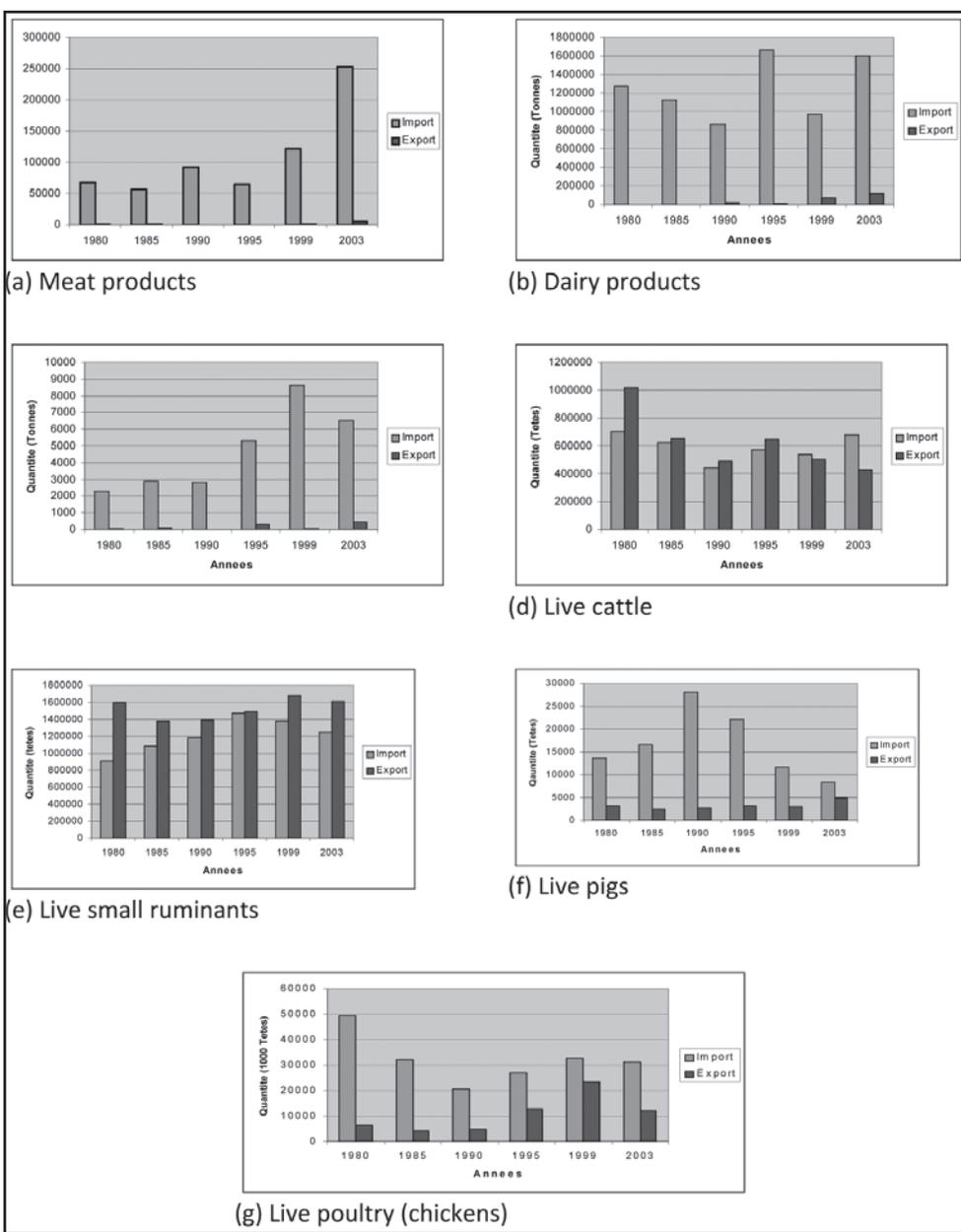


Figure 5. Evolution of the trade in animal products in the Sahel and West Africa region

Sierra Leone. The zone has little trade with other zones (some between Mali and Senegal or between Guinea and Mali) and little trade among the countries themselves (except for sheep between Mauritania and Senegal or possibly between the Gambia and Senegal).

- The second basin is the central area, comprising Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Togo. The zone acts as a pole of attraction for animal products consumed in Côte d'Ivoire and to a lesser degree Ghana. Trade with zone 3 passes through Togo.
- The third basin comprises Benin, Cameroon, Chad, Niger and Nigeria. Nigeria and to a lesser extent Cameroon are poles of attraction for animal products. Some rare trade flows may come from zone 2 (Burkina Faso and Mali), while other even less frequent flows may exist from Chad and Niger toward the countries of North Africa. Cameroon and the Central African Republic have been included with this zone, since the majority of their trade goes to Nigeria, although there are smaller flows from Cameroon to Gabon and from the Central African Republic to the Congo.

Trade flows involving cattle meat are larger, but almost all this trade in the SWA region at present is in live animals, inasmuch as current policies have been unfavourable to the development of animal product processing. The value of the trade in live cattle increased in real terms from USD 13 million in 1970 to USD 150 million in 2000 (Williams *et al.*, 2004). The market is based exclusively on demand from Benin, Côte d'Ivoire, Ghana, Nigeria and Togo.

The situations of the individual countries differ depending on changing demand, and in recent years the trend in the two main importers, Côte d'Ivoire and Nigeria, has been downward. Despite the advantage of long-standing ties between peoples, trade within the region is not always optimal. In the past, the supply of live animals has been very badly affected by droughts, especially those of the 1970s and 1980s. Drought and population growth have caused a decline in the number of cattle per inhabitant in the Sahel countries, the main suppliers to the coastal countries – from 0.78 in 1970 to 0.39 in 2000. On the other hand, this effect has been marginal in importing countries, where the number has merely fallen from 0.16 to 0.15, according to Williams *et al.* (2004).

With regard to current specific trade among countries, Burkina Faso and Mali are the main exporters of live cattle to Côte d'Ivoire, whose imports of cattle fell from slightly more than 154 000 head in 1998 to about 87 000 head in 2002, while imports of sheep and goats fell from 253 000 in 1998 to about 138 000 in 2002. These decreases are partly explained by the devaluation of the CFA franc which raised prices for red meat, the development of domestic production and an increase in the consumption of white meat (poultry and pig meat). The decreases in imports can also be attributed to the socio-political crisis of 2002 (MPARH, 2005). Nigerian imports of cattle fell from 187 6000 head in 1999 to 54 000 head in 2001. The main suppliers of the Nigerian live

cattle market are Niger, Chad and Cameroon. The downward trend in Nigeria is even more marked for sheep and goats, with the number of imported animals falling from over 1.7 billion to a little more than 100 000. This change would seem mainly a result of the country's desire to support local livestock rearing, to the detriment of imports (Ministry of Agriculture, 2003). In contrast, Ghana's cattle imports rose from 7 192 head in 1993 to 47 176 in 1994 and 35 946 in 1998, with Burkina Faso and to a lesser extent Niger as the two main sources since the 1994 monetary adjustment (MOFA, 2004). Benin and Togo represent very minor markets for exports from the Sahel.

Data on export levels and on the consumption of animal products within the region are scarce and need periodic updating. This is the only way of obtaining a clear picture of trade flows and performances in order to assess the relevance of policies in this sphere¹.

Mali's intra-regional trade with Côte d'Ivoire and Senegal in recent years gives an idea of the nature, volumes and monetary value of the trade in animal products between a Sahel country and its two neighbours, one on the Gulf of Guinea and the other on the Atlantic seaboard. A reading of Table 8 confirms that live cattle are the most widely traded product and that imports are dominated by dairy products. Between 2000 and 2003, Mali exported an annual average of nearly 6 500 t of live cattle (live weight) to Senegal for a value of CFAF 5.75 billion. The value of the trade in small ruminants with the same country was CFAF 3.26 billion (nearly 4 000 t) a year over the same period. The corresponding figures for Côte d'Ivoire are CFAF 11.84 billion (16 617 t) for live cattle and CFAF 2.09 billion (3 865 t) for small ruminants.

Mali's imports of dairy products from Senegal had a value of CFAF 223.6 million in 2000 and CFAF 216.9 million in 2003, having been reduced to a quarter of their value in 2001 and 2002. Imports of dairy products from Côte d'Ivoire maintained their level, with a yearly average of CFAF 241.5 million².

In general terms, the available information does not provide a clear picture of the real size of the subregional market in live animals. Supply flows for each coastal country generally depend on traditional trading patterns and above all on geographical position in relation to the supplying countries seeing as transport appears to be one of the determining factors in the competitiveness of the supply. For example, the cost of transporting and handling live cattle represents 40% to 60% of the total cost of cross-border marketing of live cattle, excluding the purchase price of the animals (Williams *et al.*, 2004).

¹ The absence of disaggregated statistics was a major constraint for the mission when trying to obtain a realistic picture of flows within the region. National statistical services do not regularly record trade data in such detail. There is in fact a serious problem over the gathering of statistics in the UEMOA region following the suppression of taxes on products of animal origin and the implementation of the Common External Tariff (CET).

² It should be noted that in terms of intra-regional trade these imports are mainly re-exports from Côte d'Ivoire and Senegal to Mali.

Table 8. Mali's intra-regional trade in animal products with Senegal and Côte d'Ivoire

<i>Year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>Average 2000–2003</i>
Exports to Senegal					
Cattle (t)	7 411.5	6 513.4	10 566.0	1 490.3	6 495
(CFAF 1000)	7 270 977.6	7 000 070.1	7 158 376.2	1 589 600.0	5 754 756
Sheep/Goats (t)	3 357.4	3 227.1	7 998.1	1 291.3	3 968
(CFAF 1000)	2 931 590.0	2 987 953.8	5 927 216.9	1 196 910.0	3 260 918
Other live animals (t)	5 213.8	595.5	-	1.3	1 453
(CFAF 1000)	5 179 649.7	597 007.8	-	814.9	1 444 368
Leather & skins (t)	323.3	96.6	313.6	253.3	248
(CFAF 1000)	522 511.6	119 364.7	383 663.7	413 837.1	359 844
Imports from Senegal					
Dairy (t)	176.9	35.7	29.9	192.6	109
(CFAF 1000)	223 592.9	55 722.0	52 729.4	216 898.1	137 236
Exports to Côte d'Ivoire					
Cattle (t)	9 283.6	40 923.2	9 512.4	6 749.4	16 617
(CFAF 1000)	8 947 855.4	25 400 172.0	5 956 728.1	7 078 544.3	11 845 824
Sheep/Goats (t)	4 201.9	4 698.1	5 643.4	919.2	3 865
(CFAF 1000)	3 784 762.2	4 356 025.1	3 518 911.7	1 048 515.0	2 089 136
Other live animals (t)	5 872.1	1 889.8	992.1	54.8	2 202
(CFAF 1000)	5 734 240.0	1 972 351.1	690 100.0	41.8	2 099 183
Leather & skins (t)	67.0	120.2	99.3	16.7	76
(CFAF 1000)	31 714.7	71 021.8	323 635.1	2 873.1	107 310
Imports from Côte d'Ivoire					
Dairy (t)	146.9	153.9	448.0	194.6	236
(CFAF 1000)	187 273.8	248 441.1	335 022.4	195 332.1	241 517

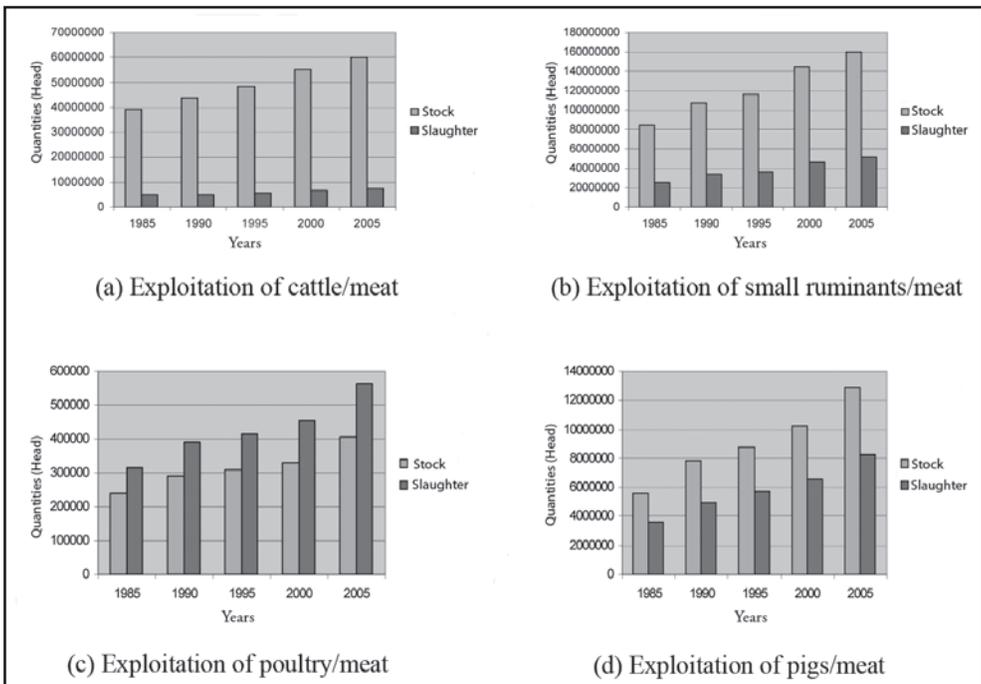
Source: Federation of Interprofessional Livestock and Meat Groups of Mali (FEBEVIM) and calculations by the mission, September 2006.

Moreover, even if meat imports (cattle, sheep and goats, poultry) from outside Africa to the coastal countries are declining, they represent significant shares of the market in livestock products.

The outlook for an increase in exports of live animals from the Sahel countries to the coastal countries seems good, despite the fact that the profitability of live animal exports seems to be linked mainly to the informal nature of the activity and the trade. Exports to Côte d'Ivoire will grow with the improved socio-political situation in the country. There is in fact a considerable and very real demand, as the rate of cover from domestic production is no more than 60%.

Moreover, UEMOA's community protection policy with its CET and the imposition of a compensatory levy on meat from outside Africa coming into the country are increasing the competitiveness of exports from the Sahel to the Côte d'Ivoire market. The establishment of a modern abattoir in Anyama and a cattle market constitute support for imports of live cattle from the Sahel.

In the case of Nigeria, the market should theoretically grow because of (i) demographic changes and growing urbanisation, (ii) the creation of a new international cattle market in Kano and the development of all border markets, (iii) professional management of markets, (iv) a political decision to develop local supply and (v) the construction of new



Source: adapted from FAOSTAT, 2005 (various years).

Figure 6. Evolution in the exploitation of regional stocks of animal resources

abattoirs in Kano and Abuja. Ghanaian demand for meat is growing and the country has no tradition of cattle rearing. The construction of two abattoirs (in Accra and Kumasi) is a clear indication of the country's desire to support local processing in order to gain added value.

3.4 A low rate of stock exploitation, but with possibilities for improvement

The low production of the SWA region measured against world production of animal products, especially meat, is partly due to the low rate of exploitation of the region's live-stock numbers. Figure 6 shows the main livestock resources and the number of animals

Table 9. Financial trade flows in animal products to and from the Sahel and West Africa region (2002)

	<i>Imports</i>		<i>Exports</i>	
	Meat	Milk	Meat	Milk
World (USD 1 000)	39 241 883	12 561 239	38 119 703	12 413 548
SWA (USD 1 000)	153 707	357 402	39 395	35 022
SWA's share in the world (%)	0.39	2.85	0.10	0.28
Sahel's share in SWA (%)	14.88	19.36	10.39	3.07
Nigeria's share in SWA (%)	11.23	52.77	0	4.16
Côte d'Ivoire's share in SWA (%)	14.68	7.87	0.07	30.70
Ghana's share in SWA (%)	17.04	8.32	0.37	0.84
Benin's share in SWA (%)	29.89	5.08	84.94	0.09
Senegal's share in SWA (%)	8.34	2.90	8.14	1.28
Share of other coastal countries (%)	3.93	3.70	-3.91	59.86

Source: calculated on the basis of FAOSTAT data (September 2006).

exploited per species. It shows that the number of cattle exploited remained constant at 12%, while available stocks steadily increased between 1985 and 2003 (see Figure 6a). Exploitation of small ruminants was higher, at about 32% of the available stock (see Figure 6b). Despite being more prolific, small ruminants and their meat were proportionately less traded than cattle and their meat.

With regard to monogastric animals, poultry, especially chickens, are the most intensively exploited in terms of both absolute value and rate of exploitation. The rate of exploitation grew steadily, rising from 131% in 1985 to 139% in 2003 (see Figure 6c), mainly because of the prolific nature and very short rearing cycle of poultry. Lastly, the rate of exploitation of pigs ranged between 63% and 64% over the period under consideration (see Figure 6d).

In short, the way livestock resources are exploited in the region suggests possibilities for improvement. Current stocks of ruminants show that the rate of exploitation could be increased by more than 10 points without harming the reproduction of rearing systems. For example, if the rate of exploitation of cattle had been 22% in 2003 (*i.e.* a 10% increase), the regional production of cattle meat would have increased by 80% over the actual 911 260.6 t. The same applies to the other species reared, all other things being

equal. The conditions to increase the rate of exploitation of livestock resources in the region must be combined with measures and procedures to make the supply chain more efficient (Sibanda and Kamuanga, 2006).

3.5 Balance of trade in major deficit

The financial trade flows (see Table 9) show that the SWA countries' share of world meat imports is 0.39%, as against 0.10% for exports. For milk, the share is 2.85% for imports and 0.28% for exports, with Nigeria accounting for more than half the expenditure on milk imports (53% of SWA imports). Benin spends the most on meat imports (30% of SWA imports). Generally speaking, the coastal countries spend more on animal product imports (milk and meat). In terms of exports, the coastal countries derive less income from animal products. Benin and Côte d'Ivoire appear to be exceptions, for meat and milk respectively, but the figures certainly refer to re-exports to the interior of the region. Data on financial flows in 2002 are typical, reflecting a chronic deficit in the balance of trade in animal products. The deficit is greater for dairy products, for which the zone is still dependent on imports to satisfy the growing demand resulting from rapid population growth, income growth and changes in food habits, especially in towns.

3.6 Need for a regional view in order to optimise trade and stimulate the market

A number of factors point to the need for a regional perspective when promoting the livestock sector in the SWA region. First, there are imbalances between regional supply and demand for animal products and between regional imports and exports (see section 2.4 above). Second, there are differences among the contributions of the three zones (the Sahel, the coast and Nigeria) in the production and exploitation of livestock resources, as seen above (see section 3.2 above). Third, there are differences among the three zones in the extent to which needs are covered by regional production. Table 10 completes the analysis of supply and demand by estimating three ratios that measure the capacity of the region and individual zones for self-supply (ratio of production to consumption) and the levels of participation of animal products in trade (ratios of import or export to consumption).

With regard to beef and veal, Nigeria seems to be the foremost consumer, ahead of the countries of the SWA region. However, the Sahel countries produce enough for their own consumption, whereas the coastal countries and Nigeria import 14% and 1% of their consumption respectively. In general terms, the region's production does not cover its consumption. The same pattern can be seen for small ruminant meat: the Sahel countries are the foremost consumers and produce enough for their own consumption. Nigeria does not import small ruminant meat, but FAO statistics fail to show the considerable export flows of live small ruminants from Niger to Nigeria and especially to Benin. The coastal countries import 2% of their consumption. Taken as a whole, the region is self-sufficient in this product.

Table 10. Average annual consumption and consumption ratios for animal products

Product Region – Zone	Annual consumption (t)	Ratio of consumption		
		Production	Exports	Imports
Cattle meat				
SWA	813 496.3	0.98	0	0.04
Sahel countries	291 869.9	1.07	0	0.01
Coastal countries	222 778.7	0.86	0	0.14
Nigeria	298 847.7	0.99	0	0.01
Small ruminant meat				
SWA	453 536.8	1.00	0	0
Sahel countries	194 825.4	1.06	0	0
Coastal countries	70 964.6	0.93	0	0.02
Nigeria	187 746.8	0.97	0	0
Poultry meat				
SWA	489 860.5	0.8	0	0.1
Sahel countries	133 507.7	0.74	0	0.04
Coastal countries	185 493.9	0.67	0	0.23
Nigeria	170 858.9	0.99	0	0
Pig meat				
SWA	229 332.1	0.98	0	0.03
Sahel countries	33 812.0	1.16	0	0.02
Coastal countries	62 772.4	0.89	0	0.09
Nigeria	132 747.7	0.98	0	0
Milk and dairy products				
SWA	2 886 656.4	0.74	0.02	0.43
Sahel countries	1 729 241.7	0.84	0.01	0.24
Coastal countries	526 099.6	0.64	0.06	0.61
Nigeria	631 315.1	0.59	0	0.79
Eggs				
SWA	532 711.1	1.00	0	0.01
Sahel countries	72 996.8	1.05	0	0.01
Coastal countries	84 432.5	0.98	0	0.05
Nigeria	375 281.7	0.99	0	0

Notes: 0 indicates that there are traces of imports or exports.

Consumption = Production + Imports - Exports.

Source: calculated on the basis of FAOSTAT (2006).

With regard to poultry meat, the coastal countries are the largest consumers, followed by Nigeria and the Sahel countries. Levels of self-supply are 99% in Nigeria, 74% in the Sahel countries and 67% in the coastal countries. The coastal countries import 23% of their consumption, as against 4% in the case of the Sahel countries. Regional production covers only 80% of regional consumption. The situation for dairy products is worrying with the regional rate of self-supply at 74% and considerable disparities between zones. The production of the Sahel countries covers 84% of their consumption, while that of the coastal countries and Nigeria covers only 64% and 59% respectively.

The opportunities of stimulating the regional supply and demand of animal products were outlined by actors in the countries visited during this study through their views of the regional livestock sector, which can be summarised as follows:

A strong and vibrant livestock industry supplying standardised products to meet the needs of 21st-century consumers.

This condensed view intuitively encompasses the need for greater valorisation of animal products, stimulation of intra-regional trade, an improvement in the quality of products etc.; in other words, the currently underexploited livestock sector must be turned into an industry to make the most of the opportunities offered in the region. All this requires the development of food resources and genetically productive breeds, the establishment of water supplies, and capacity-building within the sector. The sale of aged animals currently practised between the Sahel and coastal countries – Ghana and Côte d'Ivoire in particular – does not produce good-quality meat. Natural factors such as drought and the shortage of fodder resources in the Sahel explain the present situation.

Endemic or epidemic livestock diseases are another constraint on the development of animal production. Services to producers and veterinary services are still lacking and of uneven quality across the SWA region. Nevertheless, since the devaluation of the CFA franc in January 1994, regional co-operation has been remobilising energies in West Africa. However, the cattle meat export sector, the engine of the regional trade in animal products, is still rather traditional, despite the emergence of some modern companies.

3.7 Obstacles to the fluidity of trade, and the role of traditional commodity chains

Several obstacles to trade fluidity within the SWA region have already been identified¹. They are of various types, including both obvious and less obvious obstacles, and

¹ The text of this section is based partially on many studies of trade, especially in the central basin. These studies, focusing on issues of regional integration, were carried out by such bodies as the CILSS, the Economic Community of Cattle and Meat (CEBV), the SWAC, the Ivorian Centre for Economic and Social Research (CIRES)/University of Abidjan, the United States Agency for International Development (USAID), the French Development Agency (AFD) and the World Bank.

originate both in the cattle and animal products market and in the sphere of livestock farms.

The first obvious obstacle to the fluidity of trade in animal products – especially as regards the cattle meat commodity chain – arises from the small variability of cattle prices (in comparison with input prices) in the play between supply and demand. Variations in the price of meat products have for a long time been firmly bracketed between an upper limit set by the limited purchasing power of the people and a lower limit set by the limited profitability of livestock rearing and the trade in animal products. Prices of animal products worldwide have undergone steady, long-term erosion: a reduction in real terms of 37% for milk and 23% to 35% for meat between the beginning of the 1980s and the 1990s (Renard *et al.*, 2004). However, this pressure seems to have been even stronger on meat in West Africa; in Abidjan, for example, the average price of a beef carcass in 1981 was strictly comparable in current francs to that in 2001 (CFAF 1 200 per kg), despite inflation and the devaluation of the CFA franc (Williams *et al.*, 2004). In other words, in 20 years the price of a carcass has remained constant, whereas that of inputs has inevitably varied, while devaluation has raised the cost of nearly all imported products (including the majority of inputs for livestock rearing).

Box 3. An actor's views on the application of regional trade policies

An interviewee from the Federation of Interprofessional Livestock and Meat Groups of Mali (FEBEVIM) made these frank remarks to the mission (14 September 2006): "It must be admitted that the demand for meat products in the region is growing rapidly and that all exporting countries, including Mali, cannot in the foreseeable future satisfy this demand if nothing is done to promote the livestock sector in a regional perspective. What can be done to stimulate and benefit from trade within the region? Above all there must be a sustained political will on the part of our leaders. Because the fact is that our governments sign paper agreements with UEMOA, declaring that livestock products are local products and are therefore not subject to duty or any other form of value added tax. However, at the border between Mali and Senegal they keep charging illegal duties, for example the supplementary tax of CFAF 75 000 per cattle truck when the customs officer gets in to count the animals personally. Before the introduction of the CET, we thought taxes between Senegal and Mali would go down, but they have in fact gone up, even if they are described as 'legal'. The CET is supposed to be levied on products entering the UEMOA zone, but we keep paying it from one country to another, with customs duties even being put on local products from inside the Union."

Margins in the various commodity chains have thus been steadily whittled away – by about 5% of the final price at collection and by 10% to 12% on later links in the central trading basin oriented towards Côte d'Ivoire and neighbouring countries (Williams and Sycher, 2004). The commodity chains have therefore become very efficient in terms of costs, so that prices are multiplied by only 1.2 to 1.9 from farm to plate, as against 5 to 8 in Europe, for example. This limited profitability has prevented actors in the SWA region from investing in the modernisation of their commodity chains. In addition, although Sahelian meat is to some extent considered to taste better than frozen imports,

it does not consistently benefit from a quality bonus on the price. Market segmentation has not really occurred in Abidjan, where the size of the solvent demand willing to pay such a quality bonus is not known. All these factors hamper the regular disposal of animal products on growth markets.

Political and non-political barriers also affect the fluidity of trade within the SWA region (Williams *et al.*, 2004). These include both tariff and non-tariff instruments and also legal and non-legal instruments, for example:

- Many roadblocks collecting illegal or “wildcat” taxes: these affect the trade in animal products both between countries and within individual countries (see Box 3).
- High official taxes on animal products: these include fees for export, vaccination or health certificates, road tolls between countries, levies for livestock and/or agricultural development funds (for example, in Burkina Faso and Niger) and the arbitrary nature of taxation in the destination country (for example, Côte d’Ivoire).
- The poor state of roads and high costs of transporting cattle to markets: efforts are being made to improve access routes between countries. However, within individual countries roads linking rural markets for collection and terminal markets for export are often in a very bad state.
- The inadequate flow of market information (prices, supply and demand levels) needed for a good commercial decision.
- The absence of a formal, binding contract for trade transactions between market actors: attempts at informal contracts are under way between certain actors in different countries (Burkina Faso- Côte d’Ivoire) to ensure a regular supply to coastal towns.
- The predominant practice of trading in live animals, which does not take into account the possibility of adding value by processing animals into meat.

Trade reform policies have been initiated in the countries in the study zone. They are often the result of recommendations made in various expert studies commissioned by governments or regional organisations¹ and concern the liberalisation and facilitation of trade, payment and exchange systems, and the facilitation of investment. In practice, their application varies from one country to another and from one community zone to another (UEMOA and ECOWAS). In the UEMOA zone, there has been considerable progress in simplifying and reducing tariffs, although non-tariff barriers still remain. In the case of ECOWAS, attempts are under way to harmonise trade policy instruments on the basis of UEMOA’s experience. The political will to loosen up trade within the region is always present at meetings of the region’s leaders, but the situation on the ground sometimes leads to contrary actions.

¹ In institutional terms, various actions have been identified and recommended (ECOWAS, 1998; Williams *et al.*, 2004; Bouna Niang and Vindriet, 2005; Boisseau, 2005; Faivre Dupaigne *et al.*, 2006).

Investigation in the field allowed the mission to identify other types of constraints on the fluidity of trade within the region:

- Linguistic diversity can be an obstacle at two levels: at the moment of trade dealings on the border between two countries, and then during movements of transhumant herds, for example on the border between Burkina Faso and Ghana¹. The problem is exacerbated by the very low level of education of most involved in trade within the region.
- Monetary diversity: trade between countries in the CFA franc zone and those outside the zone requires two transactions (animal products and their monetary counterpart, which is then changed into the currency of the seller's country of origin). There are two types of problem here: first, the actors are mainly illiterate and are not well versed in exchange rates; second, exchange rates in the importing countries concerned (Ghana and Nigeria) fluctuate, so that even with a good understanding of exchange rates, there are often serious risks of losing on the transaction, since the sellers have to change the money immediately in order to return to their own countries.

Analysis of trade in the SWA region indicates an irregular degree of openness because of the barriers described above and certainly for other causes not formally identified.

Overall, flows of animal products are still dominated by traditional commodity chains. This is particularly so with the livestock meat chain, which includes cattle, small ruminants, poultry and, to a lesser extent, pigs, all of which are usually traded live and then slaughtered in the importing country. If these chains have survived the various obstacles, it is precisely because the actors have a certain expertise in this domain. Today, live animals have become the primary product exported from the Sahel to the coast. The trade is served by networks of traders via a complex traditional organisation in which trading functions are distributed among a number of complementary actors: traders, associates, guarantors, escorts, brokers and forwarding agents. The failure of projects to modernise the chain, especially difficulties regarding the export of carcasses from abattoirs (Burkina Faso and Niger) is in contrast with the efficiency of the chains involving the export of live cattle². However, the latter chains will ultimately have to deal with a number of other problems:

¹ The mission (September 2006) noted this obstacle at both levels. First, at the time of trade dealings on the border between Burkina Faso and Ghana: "People pay to cross, because they do not understand one or the other language, even if their papers are in order." This applies both to direct trade operators and to indirect actors (border officials). Second, during movements of transhumant herds: the Burkina Faso Fulas speak neither French nor the local Ghanaian language, and incomprehension can lead to violent clashes.

² It should be noted that in Niger there has been a mixed commodity chain in which the practice of trading in live animals is combined with modernisation for the export of carcasses. The example of the Niger Company for the Exploitation of Animal Resources (SONERAN) should be emulated in future plans to reorganise the cattle-meat chain intended for export.

- The insufficiency and/or dilapidated state of infrastructure for the processing of animal products. Most of the countries concerned do not have enough abattoirs, and where they do exist they are in a poor state. Consequently, daily slaughtering are insufficient to satisfy a growing demand in the towns of the coastal countries, while cattle markets overflow with live animals, leading to virtual surpluses in the supply of live animals and consequently to a fall in the price of cattle. This was made particularly clear to the mission in Côte d'Ivoire and Ghana.
- Norms and standards for animal products. The traditional commodity chains are based on the trade in live animals, for which it is hard to draw up and apply norms. However, the international trade in agricultural and food products is increasingly subject to norms and standards. The traditional chains will therefore have to meet these requirements if the SWA countries wish to play an active role as exporters in the international trade in food products.

4. Challenges to the livestock sector with a view to better placing of animal products on the regional and world markets

4.1 The cattle meat chain: conditions for a sustainable economic resurgence

The future challenge for the SWA countries will be whether the cattle meat chain can satisfy inhabitants' levels of meat and protein consumption while facing stiff competition from imported products or products from short-cycle animals, bearing in mind that cattle rearing is one of the economic drivers of the Sahel countries. Demand is changing drastically in urban zones, with a clear swing toward poultry and pig products, whether locally produced or imported, and a growth in the consumption of fish products. There is also a difference between Sahel and coastal countries. For example, annual consumption of cattle and small ruminant meat is about 10–12 kg per person in Chad and Niger, whereas it is about 4 kg per person in Côte d'Ivoire and Nigeria¹. Except for the coastal countries, the average annual increase in meat production between 1990 and 2000 was about 3% (FAO, 2005).

With regard to production, essentially centred in the Sahelian zones, the main constraint lies in the inflexibility of livestock systems and their inability to adapt to growing demand. Herders practise short- and medium-term strategies aimed mainly at guaranteeing subsistence in a harsh environment. This means that their main objective is not to market meat, which they do on an *ad hoc* basis when they need cash. However, cattle, sheep and goat meat are eaten throughout the SWA countries, and the intense, long-established trade in livestock between Sahel countries and coastal countries reflects clear complementarities in supply and demand.

¹ Recent estimates give the total annual consumption of meat (ruminants and white meat) as 7.2 kg per person in Côte d'Ivoire and 5.5 kg per person in Nigeria (see Etude diagnostique sur l'intégration commerciale, EDIC/Burkina Faso, prepared by the World Bank, 2006).

If these production systems are to be made more cost-effective, the first step would be a better organisation of production, basing this on Sahel producers' adherence to a modernisation project. Such adherence requires the extension of appropriate technological packages in order to bring about the desirable criteria of production modernisation that would be profitable for producers and increase their security. However, connecting to the remainder of the regional economy requires adapting ruminant production to market conditions: regular supply to the consumption basins (Côte d'Ivoire and Ghana; Cameroon and Nigeria; Guinea and Senegal on the Atlantic seaboard), with animals that satisfy the diversity of demand.

With regard to marketing, the first steps are to exploit the advantages of the various groups of countries in the SWA region as well as establish trade policies based essentially on a better organisation of markets for the products in the chain. The intent is to intensify trade flows of live animals and meat, so that they fulfil Sahel producers' sales hopes and create greater availability for export to the coastal countries. The aim will thus be a strategy of regular destocking of cattle produced in the Sahel outside the food crisis periods caused by successive periods of drought or in response to a favourable economic situation such as the effects of the devaluation of the CFA franc in the UEMOA countries. For all that, it is product competitiveness that must be improved by cutting distribution costs and a major reduction in transaction costs, through a much more efficient taxation system.

4.2 Regional trade in the poultry sector

The establishment of large-scale production structures in the coastal countries, especially Côte d'Ivoire and Senegal, is the logical result of the comparative advantages discussed above and of the complementarity between the SWA zones that must be developed. Short-cycle species, particularly poultry, capitalise better on the processing of imported or locally produced agricultural products such as cereals and protein cakes¹.

Regional trade in these sectors has remained minimal, despite a fairly large potential market for industrial broilers. In most of the SWA countries, poultry sectors are in crisis because of competition from European imports, but also from the United States, Brazil and Asian countries². With implementation of the UEMOA CET in 2000 (which will probably be extended to all the ECOWAS Member States), the modern poultry sectors in the region started to show signs of vulnerability. In Senegal, for example, application

¹ It is estimated that the production of 1 kg of meat requires 3 fodder units (FU) per broiler chicken, 6 FU per turkey, 4 FU per pig and 20 FU per fattened ruminant, according to a study on the competitiveness of animal production in sub-Saharan Africa and Madagascar (CIRAD/EMVT/Secrétariat d'Etat à la Coopération, France, 1997, cited by Renard et al., 2004).

² The risk of competition comes more from American chicken wings (by-products of the marketing of breasts and legs on the United States domestic market and therefore produced at minimal cost, even without subsidies) and from Asian poultry (at low cost due to cost cutting).

Box 4. SPS standards

These standards are contained in the OIE's Terrestrial Animal Code and comprise recommendations with the aim of preventing the transfer of pathogenic agents that could infect animals or humans in importing countries through the trade in live animals, animal products or genetic material. The SPS measures are applied identically to national and imported products, and encompass all the laws, prescriptions or procedures relevant to product specifications:

- *production processes and methods;*
- *testing procedures and maximum residue levels;*
- *compliance and inspection certificates;*
- *quarantine requirements;*
- *declaration of zones free of certain diseases or zones from which imports are banned.*

The information and considerations below concern animal products of interest to West Africa:

- *Four livestock diseases in sub-Saharan Africa have special economic significance for international trade: foot-and-mouth disease (FMD), rinderpest (RP), contagious bovine pleuropneumonia (CBPP), Rift Valley fever (RVF) and African swine fever (ASF). The OIE prescribes a number of diagnostic tests (required and alternative tests) to be carried out according to the procedures of the Terrestrial Animal Code in order to avoid conflicts of interpretation between countries exporting and importing animal products.*
- *Principles of identification and traceability of animals and animal-origin products are established according to the OIE standards by the competent authorities, who compile a legal framework with agreed objectives, choice of appropriate techniques for identifying and registering a product, the obligations of contracting parties, accessibility and efficient exchange of information.*
- *Principles and instructions to be followed for the inspection and monitoring (Codex Alimentarius) of hygienic practices for meat (Articles 3.10.1.3 to 3.10.1.9) are made available to the veterinary services and competent authorities of all Member States in order to reduce risks, establish norms, develop inspection and surveillance programmes, certify procedures and disseminate appropriate information to all links in the meat production chain.*

of the CET in 2001 cut customs duties by two-thirds, resulting in a 50% reduction in poultry rearing activities (Faivre Dupaigne *et al.*, 2006). Nevertheless, Côte d'Ivoire is still applying compensatory amounts of CFAF 1 000 per chicken, but this supplementary barrier does not provide total protection for national production.

It is hard to counter competition from countries that export poultry products to the SWA region (unlike the case of beef and veal), inasmuch as their production costs are always lower, while their production of poultry – and therefore of by-products – keeps increasing¹. Changes in consumer habits in Europe have meant a growing supply of by-

¹ In Senegal, statistics from the Livestock Directorate (DIREL, 2004) regarding the poultry sector are more encouraging: local production under a modern poultry system was 3.9 million laying chickens and 1.3 million broilers in 2004, representing an average 13% increase over 2003. On the other hand, imports of chickens (144 606 layers and 73 236 broilers) already represented an increase of 85% over 2003. Massive

Box 5. Principle and applicability of the concept of SPS equivalence

The WTO Agreement on SPS recognises the principle of equivalence in its Article 4, which stipulates that Member States must accept the sanitary or phytosanitary measures of other Member States as equivalent to (international) SPS standards, even if these measures differ from their own standards or indeed from those used by other Member States trading in the same product, on condition that the exporting country can prove that its measures guarantee the same level of sanitary or phytosanitary protection as that of the importing country.

The concept of SPS equivalence implies that compliance with these “adapted” standards would be less expensive than implementation of conventional international measures, while achieving the same results so far as the objectives of the SPS standards of importing countries are concerned. Some of these measures are as follows:

- *Trade in animal products instead of live animals.*
- *Delimitation of zones and compartments as alternatives to vaccination or to obtaining the status of a disease-free zone.*
- *Creation of certifying agencies (for the establishment of travel permits) in the absence of “competent authorities”.*
- *Implementation and co-ordination of regional-level SPS standards to facilitate intra- and inter-regional trade in animal products and live animals.*

In the current debate on equivalence, stress is increasingly being laid on “recognition of equivalence” rather than on drawing up formal agreements on equivalence.

products from chicken cuts. These by-products are of little value on the domestic markets and are therefore exported at a low price to countries with weak purchasing power. They compete on the consumer’s plate not only with local poultry meat (produced under both traditional and industrial systems), but also with cattle and small ruminant meat, through a phenomenon of price-driven substitution.

Most of the SWA countries, especially those in the UEMOA area, have common and not conflicting interests in the development of modern poultry sectors. They do not compete with traditional “bicycle chickens”, whose sensory qualities are particularly appreciated by local people even though they cost more than industrial chickens. UEMOA has already supplied professional organisations in its area with a better classification of inputs and products intended for modern poultry rearing. For all poultry sectors, it is important not to neglect information on (1) health control and combating livestock diseases – avian flu makes this vital – and (2) effective mechanisms and information systems concerning “future” prices, and the training of actors and consumers.

imports of frozen chickens (5 830 t in 2004) showed a rise of 80% over 2003, threatening local sectors that had already been in difficulty since the introduction of the UEMOA CET.

Given their vulnerability, special attention must be paid to poultry sectors when implementing animal health and bio-security measures in the context of cross-border trade in animal products from the UEMOA and ECOWAS areas, in order to bring about a sustainable resurgence that will stimulate trade in the region.

4.3 Compliance with sanitary and phytosanitary standards (SPS): advantages and costs

For various complex reasons, Africa plays a very small role in the international trade in animal products. The continent's meat and dairy exports amount to only 0.7% and 1.2% respectively of production (Tambi, 2005). There are livestock health and bio-security requirements and controls to be complied with before it is possible to export to the international market. Details are contained in regulations currently in force, such as the Codex Alimentarius, the prescriptions of the World Organisation for Animal Health (OIE), the WTO Statement on Technical Barriers to Trade (TBT) and the WTO Agreement on the Application of Sanitary and Phytosanitary Standards (known as the SPS Agreement). The most restrictive of the many obstacles to increasing trade with the rest of the world is still the need to comply with sanitary and phytosanitary standards (SPS) established by the OIE as guarantor of WTO norms in order to ensure the health safety of food and protect human and animal health (see Box 4).

The SPS Agreement stipulates that each country must establish its SPS measures on a scientific basis, with an objective appreciation of the risks involved. The measures adopted must aim to ensure the level of protection selected by the country in question. The agreement calls on Member States to take account of international SPS measures before defining their own, and to accept the SPS measures of their trading partners as equal to their own, insofar as they objectively show that their application allows achievement of the same level of protection.

In sub-Saharan Africa, only Botswana and Namibia export to the European Union. Considering these sanitary measures, animal products from SWA countries in particular could not be placed on the world market in their current condition, despite their competitive prices. Apart from the OIE regulations, developed countries – for example, the United States, the European Union and Japan – have introduced even more stringent legislation dealing with the traceability of products. African countries very often lack the necessary resources to train staff and invest in new infrastructure and equipment so that they can comply with SPS standards. This exacerbates the difficulties of access to more remunerative international markets and makes it hard for African countries to maintain their market share at current volumes. Between 1999 and 2003, the continent's meat production rose by 1.58%. On the other hand, exports rose by only 0.65%, while imports rose by 12.83%. Dairy production rose by 2.61%, while exports fell by 4.14%.

UEMOA encourages progressive medium- and long-term compliance with international SPS standards in order to increase the flow of animal products on intra-regional markets and create opportunities to enter international trade¹. Meanwhile, the Union is beginning to face up to the demands of globalisation with the development of industrial fishing. Studies have been commissioned and are currently under way to assess the conditions of regional-level compliance with SPS standards and food security procedures.

The creation of disease-free zones for exports to outside the region is part of the easing of international standards through application of the principle of “SPS equivalence” encouraged by the OIE (see Box 5). In West Africa, these measures are still in the draft stage² and do not seem very promising, given the mobility of the livestock systems involved and the difficulties of surveillance (Renard *et al.*, 2005). The creation of disease-free areas within a country might even be considered in order to meet export requirements. However, surveillance services from the importing country would have to be accepted and paid for in order to guarantee the sanitary quality of animal products before export.

The production of animal products and their trade cannot be envisaged without a healthy sanitary environment. In West Africa, major efforts have been made in the sphere of animal health and the boosting of national veterinary services, thanks to the Pan-African Programme for the Control of Epizootics (PACE). Nearly all the countries in West Africa have set up good *cordons sanitaires* with control arrangements at border posts that are operational and fairly effective. This has led to a reduction in the incidence of certain diseases – or at least rinderpest, with the majority of the 30 Member States now rinderpest-free. On the other hand, there is still much to be done with regard to such restrictive diseases as contagious bovine pleuropneumonia, foot-and-mouth disease and *peste des petits ruminants*. In the meantime, given that the West African sanitary environment is fairly uniform, exports must continue to the coastal countries. Combined efforts should then be made to ensure that exports continue, as is clearly in the interests of producers, traders, processors, retailers and consumers. However, with the health crises that have shaken the agriculture and food sphere in developed countries, the sanitary

¹ The Conference of Ministers of Livestock Resources or in Charge of Animal Resources held in Abidjan on 20–22 September 2006 to consider animal health and biosecurity measures in the cross-border cattle trade formulated relevant resolutions for UEMOA, the Member States and the Confederation of National Cattle and Meat Federations (CFNBV). The issues covered concerned the UEMOA countries: the need to boost veterinary monitoring and surveillance services; difficulties experienced in promoting trade within the region and gaining access to international markets, due particularly to problems in applying international standards; the lack of sufficient well-structured professional organisations for the sector and of the resources allocated for their funding; difficulties in financing the activities of veterinary monitoring and surveillance structures to ensure their sustainability; inadequate dissemination and application of legislative and regulatory documents; the major role of UEMOA in co-ordinating policies regarding livestock development and animal health prevention and surveillance; and the need to take the existence of regulations into account.

² For West Africa, an African Union–InterAfrican Bureau for Animal Resources (AU-IBAR) study suggested the creation of an export zone (free of disease) for live cattle in Burkina Faso, Chad and Mali, and a similar zone for small ruminants in Burkina Faso, Mali, Mauritania and Niger (Tambi, 2005).

Box 6. Socio-economic impact of avian flu in Burkina Faso (CEDEAO/MRA/MAHRH, December 2006)

The appearance of a proven case of avian flu in Africa in January 2006 led to a major change in the poultry sector in Burkina Faso after March 2006 (the date when the presence of the disease in the country was officially declared). Concerned to acquire more information on the sector and the socio-economic impact of the disease on actors, the CILSS and the Burkina Faso State launched a study to determine the position of the poultry sector in the national economy and its traditional role in improving the socio-economic conditions of actors in the sector in terms of income, employment and food security, with a view to analysing the socio-economic impacts of avian flu at all levels in the country.

Poultry rearing in Burkina Faso, with a total of more than 33 million birds of all species, is based on a traditional system that produces “bicycle chickens” and covers more than 60% of local consumption. Alongside this system, there is the intensive commercial system, with 250 000 birds producing eggs for local consumption. The psychosis arising from the appearance of the disease brought consumption in the country’s large urban centres to an abrupt halt, resulting in a sharp break in the supply chain. Significant losses of income from the slump in sales and the fall in prices have been recorded among poultry distributors. The disease has had a whole series of consequences, ranging from unemployment or the simple abandonment of the activity to the total loss of invested capital. For those engaged in processing (grilling and roasting meat), sales have dropped by an average of 86%, corresponding to a daily shortfall in earnings of CFAF 63 000 per processor. For rural producers, income from poultry rearing has fallen by up to 75%. For peri-urban producers practising a semi-intensive system, losses are ongoing because of the difficulty in renewing flocks and the aging of laying chickens, which means a drop in the laying rate and problems over culling. For fishmongers and butchers, there have been considerable changes, with a shift to the consumption of red meat and fish that has had varying effects depending on the type of actor.

security of food has become a major issue for their inhabitants (Le Bigo *et al.*, 2004). The situation has led to a proliferation of regulations, giving rise to trade barriers, with varying degrees of justification.

The case of avian flu

The presence of the H5N1 virus of avian flu in a good number of African countries, five of which lie in the SWA region (Burkina Faso, Cameroon, Côte d’Ivoire, Niger and Nigeria), requires immediate measures to contain the epidemic, as has been done with the support of the international community. However, it would be a mistake to relax preventive measures in the absence of an early detection system for avian flu and the lack of diagnostic capacities or adequate resources to send samples of isolated strains to specialised laboratories. Avian flu has a considerable economic and social impact in affected countries and could potentially evolve into a human pandemic (see Box 6). ECOWAS is drawing up a strategic plan with the help of the African Development Bank (ADB) and

USAID. This plan will be accompanied by a regional emergency fund for the prevention and eradication of avian flu in West Africa (ECOWAS, 2006).

If avian flu is to be eradicated, affected countries must be equipped with veterinary services and reliable supply and information systems. Recent experience has shown that the virus can spread very fast when such measures are delayed and control actions do not follow immediately. Although propagation by migratory birds is the most likely source of infection, this theory can result in serious threats to the survival of barnyard production systems and hence mean the end of a traditional rearing system that provides food for a large section of rural Africans.

On the whole, African countries that are potential exporters of animal products to the international market need information and cost-benefit studies that can provide information on the advisability or otherwise of complying with SPS standards. In the meantime, each SWA country must:

- Intensify monitoring, epidemic surveillance and eradication of restrictive livestock diseases in order to reassure importers of West African animal products that the latter are free of disease, infection and residual chemical waste, and that their sanitary security is therefore guaranteed.
- Build institutional capacities in terms of adequate support policies, legislation on the use of veterinary medicines and products, and reliable approval and certification systems for animal products intended for markets.
- Refine diagnostic tools and systems so that a vaccinated animal can be distinguished from an infected one.
- Participate actively in international consultations and forums to formulate SPS measures.

CHAPTER THREE

ECONOMIC, SOCIAL AND ENVIRONMENTAL ISSUES INVOLVED IN PASTORALISM

1. Definitions and importance of transhumant pastoralism

Various authors, such as Lhoste *et al.* (1993), have provided definitions of transhumance, and these may be summarised as follows: “Transhumance is a system of animal production characterised by seasonal movements of a cyclical nature and to varying extents. These movements take place between complementary ecological zones, under the care of a few people, with most of the group remaining sedentary.” Transhumant herds usually move away from environments that are out of balance, harsh and changing, such as Sahelian zones. In such a context, transhumance can be seen as a form of adaptation of these environments and optimisation of ecological complementarities between Sahelian and Sudanian regions. It is a livestock system based on a strategy of ecologically viable, *ad hoc* management of pastoral resources, which has enabled herding

communities, particularly the Fula, the Tuareg and the Moor, to survive the major climatic crises that periodically affect the Sahel countries.

In the SWA region, pastoralism is the main rearing system for domestic ruminants (cattle, sheep, goats and camelids). In the Sahel countries, such as Burkina Faso, Chad, Mali, Mauritania and Niger, an estimated 70% to 90% of cattle are reared under this system. Cross-border transhumance is thus the dominant feature of pastoralism in the region. Although there are no reliable statistics to quantify the numbers of animals involved, estimates by various professional herders' organisations during the Mission of Experts' consultations suggested that more than two million cattle are driven yearly in transhumance to Benin, Burkina Faso, Chad, Mali and Nigeria. The region of the Liptako-Gourma Authority (372 000 km²), an intergovernmental (Burkina Faso, Mali and Niger) agency for rural development, reports more than half the herds of the three countries as being reared under the pastoral system. It is estimated that the proportions of transhumant herds will grow almost exponentially over the next 20 to 30 years. Liptako-Gourma is a fall-back zone where flows necessarily increase in the dry season¹. In Mauritania, the flows of transhumant animals towards Mali and Senegal are estimated at more than one million head, *i.e.* 5% to 10% of Mauritania's total livestock (IRIN Afrique, 2006). Seen by Sahelian herders as an opportunity to improve the productivity of their herds, or even to save animals from certain death, it is not, as one livestock farmer said, that herders have a particular taste for moving around, but is rather something imposed by natural conditions. Nonetheless, cross-border transhumance is seen by the inhabitants of reception countries as a plague to be eradicated (back cover)².

Pastoralism has always played an important role in the regional trade in livestock and animal products. Its contribution has steadily declined since the 1990s for a combination of reasons, including ecological crises in the wake of recurrent droughts in the Sahel, rinderpest outbreaks, armed conflicts and the devaluation of the CFA franc. These factors have affected the production and productivity of herds, with a negative impact on the regional availability of livestock and animal products. As the main supplier of animal products, especially meat (see Chapter Two, paragraph 1.1), pastoralism still has a major role to play with a view to boosting regional trade. A careful analysis of its evolution is therefore needed in order to identify what could be done to make it more effective. However, an appropriate policy framework is still a prerequisite for optimising pastoralism.

¹ Verbal communication to the mission by the Liptako-Gourma Authority, Ouagadougou, 7 September 2006.

² The mission gathered statements along these lines from several informants in herd reception zones: "Nowadays transhumant herders do not follow the same routes. The defined passage zones and transhumance corridors between fields are no longer respected – and this gives rise to conflicts."

2. Cross-border transhumance movements

Map 3 shows the major cross-border transhumance routes in West and Central Africa. It is based on (i) field research in Benin, Burkina Faso, Niger and Nigeria, (ii) a study of the situation of cross-border transhumance in the W Park region (Benin, Burkina Faso and Niger), (iii) work of the ECOWAS task force on cross-border transhumance and (iv) other documentary sources on the Internet. Two types of route were found: north–south routes are the more numerous and indicate dry-season transhumance movements in the departure zones, while south–north routes are less numerous and indicate wet-season movements. A general observation is that most West and Central African countries are affected by cross-border transhumance, either as departure countries, or as reception or transit countries. Transhumant pastoralism is thus a regional phenomenon and is quite rightly taken into account in the Common Agricultural Policy of the Union (PAU) and the ECOWAP.

3. Policy and regulatory framework regarding pastoralism

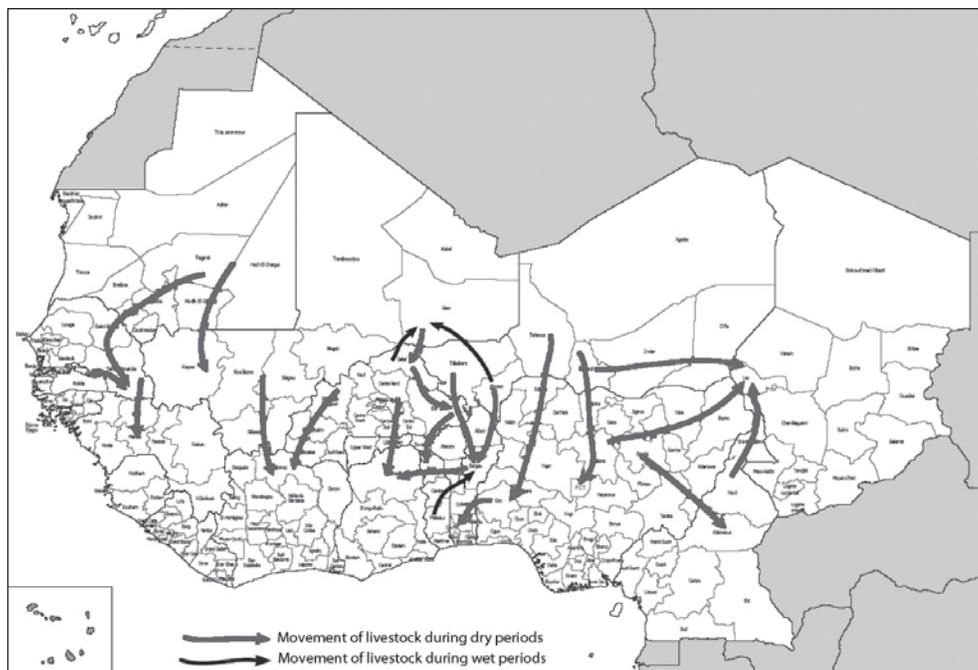
3.1 Regional agricultural policies (PAU and ECOWAP) and transhumant pastoralism

The regional agricultural policy documents drawn up by UEMOA (the PAU) and ECOWAS (the ECOWAP) stress cross-border transhumance as an efficient means of optimising natural resources and the agroecological complementarities between Sahel and coastal countries. In view of demographic growth (both human and animal) and the deterioration in climatic conditions with a consequent drastic reduction in rangelands, transhumance movements can generate problems and conflicts. Interventions are intended to create conditions for the peaceful practice of cross-border transhumance, which is clearly in the interests of Member States. To this end, the Regional Action Plan 2006–2010 for implementation of both the ECOWAP and the NEPAD Detailed Programme for the Development of African Agriculture (PDDAA) include a programme for the sustainable management of pastoral resources and the management of transhumance. The programme is built around four major lines of action:

- i. Training and information for herders and other actors involved.
- ii. Development of cross-border facilities and management of transhumant movements.
- iii. Development of rangelands and support for the formulation of rules regarding the use of common resources (rangelands) at the local level.
- iv. Co-ordination of regulatory measures and development of health services.

The mission's discussions in the field with those involved in transhumant pastoralism indicate that regional authorities are not providing effective support to individual States with regard to the management of transhumance. Various regional studies on transhumance have thus highlighted the constraints, potential and actions to be taken. In

2004, in the context of management of cross-border transhumance in the W Park region, the countries concerned (Benin, Burkina Faso and Niger) requested support from UEMOA to fund an in-depth study on transhumance and urgent action to suppress illegal exploitation of the park by transhumant herds. In 2002, at the end of an evaluation of implementation of the ECOWAS Decision on Cross-Border Transhumance among Member States, strong complaints were expressed regarding the lack of financial support to countries for the development of transhumance corridors and rangelands, and the installation of livestock infrastructure. Until now, these complaints have received no response. ECOWAS has neither directly funded activities, nor supported any country in obtaining funding to undertake such action. This explains the actors' jaundiced view of the regional authorities with regard to cross-border transhumance and the livestock sector in general.



Map 3. Cross-border transhumance routes in West and Central Africa

3.2 ECOWAS Decision A/DEC.5/10/98: a regional regulation to be adapted to local circumstances

Cross-border transhumance is governed by Decision A/DEC.5/10/98, adopted at the 21st Ordinary Session of the Conference of Heads of State and Government, which lays down the conditions for the movement of livestock, the care of transhumant animals and the reception of transhumant livestock. The mechanism for implementation of the decision is the ECOWAS International Transhumance Certificate (ITC), a type of passport for transhumant herds, which has the following objectives:

- i. To allow management of the departure of transhumant herds.

- ii. To ensure sanitary protection of local herds.
- iii. To provide the inhabitants of reception zones with advance information on the arrival of transhumant herds.

The decision is intended to complement and reinforce national regulations on cross-border transhumance.

Since it was adopted, the decision has encountered many obstacles to its application. On the one hand, transhumant herders from Burkina Faso and Niger complain that transhumant tracks and corridors in reception zones (Benin, Côte d'Ivoire and Ghana) are being occupied and that they are subject to much administrative harassment. On the other hand, the inhabitants of reception zones accuse transhumant herds of damaging crops and harvests, illegally grazing protected areas with consequent degradation of wildlife and its habitat, violence to local people etc. Some of those concerned in transhumance complain of the inadequate involvement of grass-roots organisations and the rigidity of the Decision.

Aware of the poor application of the decision, ECOWAS organises a yearly mission to raise the awareness of all those involved in transhumance – herders, traditional chiefs, central and decentralised authorities etc. For their part, countries are establishing bilateral (Benin–Burkina Faso, Benin–Nigeria, Benin–Niger etc.) or multilateral (Benin–Burkina Faso–Niger) agreements concerning the ECOWAS Decision in order to manage cross-border transhumance better. These promising initiatives would become more effective if grass-roots organisations (for example, the Association to Revive Herding in Niger [AREN] in Niger, the Departmental Union of Professional Ruminant Rearers' Organisations [UDOPER] in Benin and the Pastoralism Communication Network [RECOPA] in Burkina Faso) were made responsible for spreading information on the Decision¹.

The mission's interviews with institutional actors (the Pastoral Development and Land Tenure Directorate in Burkina Faso, the Livestock Directorate in Benin) and professional herders' organisations (notably AREN in Niger and UDOPER in Benin) indicate that the ECOWAS decision regulating cross-border transhumance is rigid and its application on the ground requires co-ordination between the departure and reception countries. Such discussions should take place both at inter-State level (for example high-level joint commissions) and in the framework of networks of professional herders' organisations. At the inter-State level, the issue of cross-border transhumance is discussed by experts from the two countries concerned and the results are translated into an agreement on

¹ With regard to pastoralism and the management of cross-border transhumance, the Integrated Development Authority of the Liptako-Gourma region seeks to use discussions at meetings of actors, in particular experts from Member States, grass-roots organisations (AREN, the Regional Committee of Sahel Producers' Unions [CRUS], TASSAGH etc.), leaders of livestock projects in Member States and resource staff, for strategic thinking and the formulation of practical proposals to be submitted to decision makers for consideration.

transhumance, which addresses all the problems linked to cross-border movements of livestock, such as the period of transhumance, entry and exit posts, reception zones and animal health certificates. In the second instance, discussions should take place between herders' organisations in the departure and reception countries in order to make signed agreements operational. Issues to be dealt with in the framework of networks of professional herders' organisations include the provision of information to transhumant herders and to livestock farmers and other people in the reception zones, and many other practical aspects of transhumance management, including the prevention and solution of conflicts.

For both these sets of discussions, the role of ECOWAS should be that of supporting the countries concerned with technical and financial assistance for the implementation and operation of the frameworks. It should also support them in seeking the funding needed to carry out the actions and measures identified during bipartite discussions.

3.3 Rangeland tenure: inadequate legislation

With regard to land tenure, the Final Declaration of the Praia+9 Forum on rural land tenure and sustainable development in the SWA region is the only regional frame of reference. It calls in particular on the Member States of the CILSS, UEMOA and ECOWAS to pay special attention to the aggravation of land tenure crises and commits them to taking appropriate steps for the discussion, negotiation and eventual adoption of a subregional land tenure code that fosters security of investments, preserves the rights of local communities and ensures the national interests of each country.

There is thus no regional regulatory document dealing with rangeland tenure in West Africa. For each country (especially in the Sahel), laws holding the place of pastoral codes have recently been adopted (since 2000) and applied with varying degrees of success, for example the Orientation Law on Pastoralism in Burkina Faso, the Pastoral Charter in Mali, the Pastoral Code in Mauritania and the Nigerian Pastoral Code, which is in process of formulation. These legal texts emphasise access and sustainable, peaceful use of common pastoral resources. Their adoption marks a significant advance in the management of pastoralism and transhumance. However, they do not prevent the ongoing shrinking of rangelands in the face of the advancing agricultural front, which is driven by population growth. Moreover, they do not solve the problem of the tragedy of the commons¹ (Hardin, 1968; Rojat, 1991), which is responsible for the degradation of collective grazing land and the poor productivity of herds.

¹ The theory of the commons applied to collective rangelands states that the inevitable consequence of the private ownership of livestock and the collective ownership of rangelands is an excessive increase in the number of animals, leading to an overloading of the rangelands, a low fecundity rate and a high mortality rate.

3.4 Environmental determinants governing transhumance

The two main factors in domestic ruminant production in the traditional livestock systems of West and Central Africa are green grazing and drinking water. These factors are primarily dependent on ecoclimatic conditions. Several classifications can be found in the literature, but the most suitable for natural rangelands is one based on the period of vegetation growth. Definition of the vegetation growth period is helpful because of its importance for the pastoral exploitation of grassy vegetation. According to the FAO, the growth period of vegetation corresponds to the period of the year when rainfall is higher than half the potential evapotranspiration. During this period, all or part of natural rangeland vegetation can be grazed green by livestock. For perennial grasslands, the growth period begins earlier and continues later than that of annual grasslands.

Table 11. Agroecological zones of some countries in West and Central Africa

Ecoclimatic zone	Isohyets (mm)	Period of vegetation growth (days)	Benin	Burkina Faso	Niger
Arid	≤ 500	0-90		X	X
Semi-arid	500–1000	90-180	X	X	X
Subhumid	1000–1500	180-270	X	X	
Humid	≥ 1500	270-365	X		

Source: adapted from Hans E. Jahnke (1984).

Using the classification of areas according to the growth period of grassy vegetation, the ecoclimatic situation of some West African countries is given in Table 11. According to this table, the Vegetation Map of Africa (White, 1986) and the map of changes in the length of the growing season established by the CILSS/SWAC/OECD (2005), the pastoral ecosystems of the Sahel countries (arid and semi-arid zones) are covered by a vegetation dominated by savannahs of annual grasses with a growth period of 20 to 180 days. In these zones, rainfall varies greatly from one year to the next, giving a variation co-efficient of more than 30%–33%, the threshold above which an ecosystem is considered out of balance¹ (Illis, 1999). The coastal countries lie in the humid and subhumid ecoclimatic zones, with a vegetation growth period of more than 180 days. In these areas, the vegetation is dominated by savannahs of perennial grasses that can produce re-growth of excellent quality fodder during the dry season, which is highly sought after by livestock. This comparative advantage of the coastal countries over those of the Sahel in terms of ecoclimatic conditions, including better watering conditions, determines

¹ The theory of the balance or imbalance of ecosystems defines those out of balance as ones in which the local population does not live in sustainable harmony with the other elements of the same system, particularly the resources and the climate.

north–south transhumance flows. The proposal to turn the northern savannah zones of the coastal countries into fattening zones is based on this advantage.

4. The future of pastoralism in the face of restricted access to resources

Given the constraints on access to resources, the future of pastoralism depends on the ability of the region's countries to find adequate solutions to the three problems facing transhumant herders. These problems are described below¹.

4.1 Vulnerability of access and use of pastoral resources

Pastoralism is based on a certain number of principles that give it its effectiveness and legitimacy:

- i. Herd mobility.
- ii. Use of common natural resources.
- iii. Access to a variety of resources.
- iv. Pairing of zones with different aptitudes in complementarity.
- v. Reciprocity of access to resources.

During the colonial period, transhumance was known and well defined as a seasonal north–south movement. Since the 1970s, pastoral and agropastoral livestock systems have been seriously affected by climatic and socio-economic phenomena that challenge all or some of these principles. In some regions of West Africa, the situation of livestock rearing has become very precarious and pastoral and agropastoral systems extremely vulnerable in terms of access to pastoral resources (the Lake Chad network, the cotton basins of Mali – Koutiala and Ségou, Benin – Borgou and Alibori, the Zou, and river valleys – Niger and Senegal). The development of pastoralism is facing major obstacles – in terms of the principles listed above – including the reduction in grazing areas, resource degradation, the occupation of strategic pastoral areas and the blocking of transhumant tracks and corridors.

Several factors are contributing to a dramatic reduction in rangelands and threatening pastoral systems. In most of the SWA countries, the agricultural front is advancing by 3% to 6% a year, at the expense of rangelands. The colonisation of silvipastoral areas is growing in the Sudano-Sahelian regions in the south of the Sahel countries and the north of the coastal countries. Agricultural surpluses are often re-invested in livestock, thereby increasing pressure on resources.

The degradation of pastoral resources, which has accelerated drastically following the great droughts of the 1970s and 1980s, is constantly reducing pastoral potential. Apart from climate deterioration, the increase in animal numbers is overloading pastures and causing degradation, especially in cases where herds are not so mobile. In the Sahel,

¹ Summary of results of consultation by the mission and a review of documents.

degradation is also seen in a lowering of the water table, with negative consequences for browsing pasture, and the silting up of ponds, lakes and rivers (the Gambia, Niger and Senegal), thus reducing their pastoral potential (degradation of flood plains and reduced possibilities of watering livestock).

Access to Sahelian ponds, valley bottoms and rivers is an important link in the chain of annual grazing, especially for the use of surface water and dry-season fodder reserves (flood plains). The agricultural development of these strategic grazing areas with off-season crops and the installation of irrigation schemes in the 1970s and 1980s have deprived herders of key resources. For example, the large-scale schemes carried out in the valleys of the Niger and Senegal Rivers did not incorporate livestock rearing sufficiently into their development plans¹. The river valleys have become mosaics of crops where it is sometimes hard to find a way through for livestock (IRIN Afrique, 2006). The situation is similar with regard to agricultural occupation of the rangelands around Lake Chad.

Nowadays, most of the livestock routes are blocked by fields, forcing herders to make wide detours to reach water or fodder resources. Certain transhumance corridors have to pass through protected areas, where grazing is forbidden. In the border regions of Benin, Burkina Faso, Niger and Togo, for example, transhumant herds have to cross the “forest barrier” of the WAPO park complex (W, Arly, Pendjari and Oti-Mandouri wildlife parks, reserves and hunting zones) to reach reception zones in Benin and Togo via the two unequipped corridors of Kondio and Arly. These corridors have no rest areas, so that herders have to enter forbidden zones and thus commit offences that are severely punished.

4.2 Vulnerability to climatic variability and change

Climatic conditions in West Africa, especially in the Sahelian zone, have been suffering chronic major variations since the early 1970s. The drought cycles that have afflicted the Sahel over the past 30 years have taken the form of a decline in rainfall and a greater variation in its distribution both geographically and in period, a decrease in flow in water courses etc. The decline in annual rainfall since 1970 ranges from about 15% to more than 30%, depending on the zone (UICN, 2004), so that isohyets have slipped about 200 km southwards. The decrease in flow in the region’s main water courses – The Gambia, Niger and Senegal Rivers – ranges from 25% to 60%.

The deterioration of climatic conditions has reduced the carrying capacity of rangelands and the possibilities of watering livestock. The strong link between rainfall and grassy biomass means that any reduction in the former brings about a reduction in the

¹ This situation is illustrated by the observations of Moktar Fall, Director of the Livestock Department at Mauritania’s Ministry of Rural Development and the Environment at the signing of the Agreement on Transhumance with Senegal: “This agreement is important because of the increasing competition between farmers and herders.”

productivity of natural pastures. Moreover, the productivity of flood plains, which are strategic dry-season fodder resources in the Sahel, is seriously affected by any change in the level of water courses and lakes. Lastly, the decline in rainfall threatens the permanence of some bodies of water (ponds, dams, lakes etc.) with negative consequences for the watering and productivity of livestock. Extreme events (drought, floods etc.) have become increasingly frequent, affecting livestock. Thus, the major droughts of the 1970s and 1980s wiped out more than 30% of the livestock and ruined many Sahelian herders, while in 2002 torrential rains killed more than 50 000 cattle and 50 000 small ruminants in the south of Mauritania and the north of Senegal.

4.3 Problems and conflicts linked to cross-border transhumance

In cross-border reception zones, transhumant livestock share the use of renewable natural resources with such other activities as agriculture, forestry, wildlife tourism and fishing. Cultivated areas have expanded considerably under pressure from the population growth of indigenous inhabitants, the arrival of immigrants from other regions (including agropastoralists) and the promotion of cash crops, especially cotton. Agricultural and forestry pressure on land has resulted in the occupation of pastoral areas (livestock routes and transhumance corridors, reception zones, key resources). This situation considerably increases difficulties of movement for transhumant herds and hampers their exploitation of natural resources, thereby setting the scene for conflicts over land tenure. There has thus been a resurgence in clashes, sometimes resulting in fatalities, in transhumance zones. Between 1986 and 1994, Benin recorded 90 deaths, 57 alone in the department of Zou, where excellent grazing is found. In view of this situation, in 2000 Benin decided to suspend cross-border transhumance throughout the country. Despite the suspension, transhumance has continued in the country, albeit with varying amounts of administrative harassment, according to herders.

Conflicts in transhumance zones (transit and reception areas) arise from the opposing interests of herders and other users of natural resources, and sometimes those of different herders when fodder resources become scarce. The causes of conflict vary according to those involved. Table 12 summarises the various types of conflict and is based on a study of the situation of transhumance in the area of the W Regional Park (Benin, Burkina Faso and Niger). Apart from conflicts with other users of natural resources, transhumant herders have to face other kinds of problem, particularly the lack of security, with armed bandits holding herders to ransom and the total or partial loss of their herds.

5. The future of pastoralism in the face of communalisation in rural areas

Apart from the traditional factors involved in the vulnerability of pastoralism, the recent development of other institutional factors in the various countries in the region raises other questions on the future of pastoralism. Two institutional changes deserve special attention.

Table 12. Types of conflict between transhumant herders and other users of natural resources

Type of conflict	Main causes
Transhumant herders <i>vs</i> farmers	<ul style="list-style-type: none"> – Occupation of pastoral areas (cattle tracks, grazing areas, access routes to watering points) – Damage to crops or harvests in fields
Transhumant herders <i>vs</i> forestry services	<ul style="list-style-type: none"> – Non-existence or lack of development of transhumance corridors, forcing exhausted animals to make wide detours – Grazing of protected areas, degradation of wildlife and its habitat – Ill-treatment of confiscated animals, systematic slaughtering of animals
Transhumant herders <i>vs</i> holders of hunting concessions	<ul style="list-style-type: none"> – Degradation of wildlife and its habitat – Bad image of hunting zones among foreign visitors because of the presence of domestic animals in concession areas
Transhumant herders <i>vs</i> resident livestock farmers	<ul style="list-style-type: none"> – Night-time grazing, damage to fields, exacerbation of conflicts with farmers – Overgrazing, forcing resident livestock farmers to move
Transhumant herders <i>vs</i> uniformed bodies (local and State police, customs officers, forestry officials)	<ul style="list-style-type: none"> – Administrative harassment, including “wildcat” taxes – Failure to respect national and regional regulations on cross-border transhumance – Human injury (women raped, men killed etc.)

Source: adapted from Toutain *et al.* (2002).

5.1 Communalisation and transfer of responsibility for natural resource management

Since the 1990s, most of the SWA countries have been engaged to varying degrees in the process of decentralisation. Communalisation in rural areas is marked by a transfer of responsibility for natural resource management from the central government level to local communities. The management of common resources by grass-roots communities, through their representatives (municipal councils, village development councils), provides opportunities to take account of the concerns of herders and the management of pastoral resources (see Table 12). However, there are risks that pastoralists and agropastoralists will be sidelined still further in any decision making. The mission was informed of the points of views of the various parties, particularly in Burkina Faso, Mali and Niger.

5.2 Decentralisation in rural areas: a risk or an opportunity for pastoralism?

Decentralisation can further contribute to curbing herders' mobility and increasing their insecurity with regard to access to pastoral resources. By strengthening local powers, decentralisation gives more power mainly to sedentary inhabitants in decisions concerning the sustainable use of resources. This could lead to a much greater marginalisation of pastoral minorities in traditionally agricultural regions. The main risks for livestock rearing from decentralisation are as follows:

- No or poor representation of pastoralists in decentralized authorities.
- Increased pressure on pastoral resources through the granting of concessions and the promotion of hydro-agricultural schemes benefiting private investors.
- Threats to the integrity and concerted management of strategic pastoral areas following the division into communalised lands.
- Risks of abuse in the search for greater contributions from herding to the budget of local communities.

Apart from these risks, the mission saw real opportunities offered by communalisation in rural areas. These concern better organisation and non-conflictual management of local and cross-border transhumance. In Mali, for example, the communes of Menaka and Ansongo have instituted grazing taxes for transhumant livestock. The money raised also enables the communes to combat the insecurity suffered by herders and their livestock because of armed bandits (with ransom demands and livestock rustling). In Benin, the mayors of rural communes have become special dialogue partners of the National Transhumance Committee and its local representatives regarding organisation of the annual transhumance (internal, rather than cross-border) seasons. In this way, 56 rural communes have been made aware of rural zoning and the creation of transhumance corridors and grazing areas.

In the transhumance zones of West Africa – as has been done in North Africa, for example – grazing taxes could constitute a means of resolving conflicts over access to pastoral resources between Sahelian herders and the local inhabitants of the reception zones. The monies collected would then be used to fund local development and the rehabilitation of degraded rangelands. The communes and local inhabitants of the reception areas would then no longer see transhumance as a curse, but rather as a “business opportunity”. The study carried out in the west of Burkina Faso by Lalba *et al.* (2005) confirms the feasibility and socio-economic viability of such a proposal.

To sum up, decentralisation in rural areas entails both risks and opportunities. It is important to promote good communal relations in order to make pastoralism more secure.

Box 7. The West African Pilot Pastoral Programme (WAPPP)

The WAPPP was implemented in six West African countries (Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal) with technical and financial support from the World Bank. The aim was to apply an integrated approach to rangeland management.

The programme had the objective of reshaping the landscape of irrigation schemes in order to make pastoral activities possible through a sustainable improvement in the water cycle, the flow of organic and mineral matter and the ecological succession. The following activities were carried out: (i) organisation and training of herders in integrated rangeland management; (ii) identification and development of grazing zones, including subdivision and mapping; (iii) formulation and implementation of a management plan for grazing zones; (iv) rangeland management: rotational grazing that respects the minimum rest time and maximum use time, promotion of excellent quality fodder species, fencing off, rehabilitation of degraded areas etc.; (v) herd management: grazing herds on the same plots; and (vi) monitoring and evaluation of rangelands and herds. After six years (1995–2000) of implementation, the final evaluation of the programme noted a positive impact of integrated rangeland management in the pastoral zones of certain countries. In Chad, for example, evaluation by herders reported: (1) regeneration of species to be promoted (vanished or threatened pasture species); and (2) an improvement in the weight and numerical productivity of herds.

6. Challenges regarding environmental preservation

The challenges of pastoralism in terms of environmental preservation can be summarised in three points.

6.1 Exploiting rangelands while preserving their productive capacity

While transhumance can relieve pressure on rangelands in home grazing areas, it can also lead to the degradation of pastoral resources in transit and reception zones: on the one hand, the increase in livestock numbers caused by a combination of transhumant herds and increased numbers of local livestock and, on the other, the reduction in grazing areas can lead to an overloading with livestock and hence the degradation of rangelands. The carrying capacity of pasture zones must therefore be respected, and management rules drawn up and applied. All these elements must be incorporated into an integrated management plan for pasture zones. Rangeland management has been tried out with varying degrees of success in some countries in the SWA region (Chad, Guinea, Mali, Mauritania, Niger and Senegal) under the West African Pilot Pastoral Programme (WAPPP) (see Box 7).

6.2 Preserving and improving biodiversity

In ecosystems that are out of balance, such as those in the arid and semi-arid zones, mobile herding is recognised as the most ecologically viable and economically profitable system. However, transhumance is also the cause of environmental degradation, because

the situation of insecure access to resources in which the livestock system has evolved in agropastoral zones leads herders to exploit protected areas. An aerial census carried out in April and May 2003 clearly confirms the heavy pressure being exerted on protected areas by grazing livestock (Bouché *et al.*, 2003): 1 171 herds of cattle, totalling 101 309 animals, were counted in and on the edges of the WAPOK complex. Herds of cattle have been observed in nearly all protected areas, with high densities in the W National Park and the Djona Hunting Zone in Benin, the Tamou Total Faunal Reserve in Niger, and the Oti-Mandouri Faunal Reserve and Keran National Park in Togo. Transhumant herders see these areas as free access zones or as controlled access zones with browsing rights (with payment of penalties), and as preferable to village lands where the consequences of conflicts with farmers are more serious.

In order to preserve biological diversity in protected areas, herding should be made more secure by creating the right conditions for mobility and grazing in transhumance zones (see Box 7). Improvement in the conditions of mobility and in access to a range of resources will also enrich biodiversity through zoochory¹.

6.3 Maintaining the fertility of agricultural land

In the pastoral livestock system, herds primarily exploit fallow land, marginal areas (sylvopastoral zones) and crop residues. The biomass thus ingested is largely transformed into organic manure to fertilise agricultural land in a transfer of fertility that some farmers and herders formalise in “manure contracts”. Grazing animals can also speed up the recycling of nutritive elements contained in agricultural by-products, thus helping to restore soil fertility.

Lastly, the evolution of the pastoral livestock system toward agropastoralism in the transhumant transit and reception zones will exploit the advantages of combining agriculture with livestock rearing, inasmuch as the livestock provide the manure and energy to expand crop production.

7. Ongoing changes in pastoralism

For some decades, transhumant pastoralism, the most widespread system of rearing domestic ruminants in the SWA region, has been steadily evolving toward the sedentary agropastoral system, also called the mixed farming and livestock system (see Chapter 2, paragraph 3.1.3 above). According to the actors met, this trend is being driven by various factors, including the ecological crises caused by the great droughts of the 1970s and 1980s, the transfer of livestock ownership and the difficulties and conflicts connected with transhumance.

- i. Climatic variability and changes, in this case the great droughts of the 1970s and 1980s, provoked major ecological disruptions in the Sahel, in particular the

¹ Zoochory is the dissemination of seeds by animals.

degradation of pastoral resources. Rangeland productivity declined dramatically, and ponds and water courses became silted up, reducing the pastoral potential of the Sahel. Herders then sought to contain the risks by diversifying toward cereal crops to reduce exploitation of their herds.

- ii. One of the harmful effects of the droughts was decapitalisation of herds, impoverishment of herders and the transfer of livestock ownership to farmers. This transfer is also the result of capitalisation of agricultural surpluses in livestock, especially in the cotton zones (west Burkina Faso, the Malian Textile Development Company [CMDT] zone in Mali, north Benin and Côte d'Ivoire etc.). Most of the herds are entrusted to the care of Fula herders. Today, 44.5% of the cattle herds in Burkina Faso belong to Fulas (MRA, 2004), whereas cattle rearing was the "private reserve" of this ethnic group in the 1960s.
- iii. The third major factor leading to sedentarisation is the difficulties and conflicts connected with transhumance, inasmuch as transhumant herders are facing increasing numbers of difficulties (administrative harassment, loss of animals etc.) and more serious disputes (communal conflict, sometimes resulting in deaths). Confronted with these problems, some herders are abandoning this way of life and others are adopting a strategy of semi-sedentarisation of their herds in reception zones (Bernardet, 1984).

The sedentarisation policies adopted by certain countries have not had the anticipated results. In response to the successive droughts of the 1970s and 1980s, some governments also encouraged herders to settle in reception zones by establishing infrastructure to increase livestock productivity. Particularly good examples are the agropastoral zones of Burkina Faso (Sidéradougou, Samorogouan and Yallé) and the north of Côte d'Ivoire. These equipped zones have in fact been used as reception zones for Sahelian herds suffering from drought and as fall-back zones for herds during the cropping season. In spite of the efforts and resources devoted to the matter, most herders continue to practise transhumance, whether on a small or large scale.

The failure of sedentarisation policies can be attributed to a lack of understanding of the real determinants of transhumance. One of the main determinants is risk management (with regard to food, health, socio-economic factors etc.). The Sahelian environment is an unbalanced ecosystem, in which resources are uncertain, with uneven distribution in both time and space. The best possibility of exploiting these resources lies in herd mobility, which also allows exploitation of complementarities between the Sahelian and Sudanian zones. Hence the need for regional organisations (ECOWAS, UEMOA, CILSS, ROPPA etc.) to focus on transhumant pastoralism.

However, support for transhumant pastoralism does not amount to a rejection of intensification. It should be noted that intensive livestock rearing concerns (fattening, dairy production, animal traction) are supplied by pastoral breeding herds. Moreover, the sectoral policies of most Sahel countries are aimed at supporting pastoralism and

promoting the intensification of livestock systems; for example, the Action Plan and Investment Programme for the Livestock Farming Sector (PAPISE) in Burkina Faso and the document on rehabilitation of the livestock sector in Niger.

CHAPTER FOUR

WHAT ROLES CAN LIVESTOCK SECTOR ORGANISATIONS PLAY?

This chapter centres on several key questions: what types of organisations, restructuring, and operations are necessary to enable actors and operators in the livestock sector to play a predominant role in facilitating trade in animal products, the protection of producers' rights, and the well-being of consumers?

1. A look back at history

In West Africa, trade in livestock and animal products flows from north to south. Statistics show that three countries—Burkina Faso, Mali, and Niger—supply the bulk of such products to end markets in the Gulf of Guinea countries. Livestock sector operators in these three Sahel countries have received some governmental support in organising associations of livestock producers or traders to improve meat supplies for coastal countries. Institutions created as a result of economic and political integration

initiatives during the 1970s, i.e. Economic Community for Meat and Livestock (CEBV), West African Economic Community (WAEC), and the CILSS, developed a number of instruments to simplify trade and lower tariff and non-tariff barriers to facilitate the movement of animal production between the Sahel countries (producers) and the coastal countries (consumers). The results were not always commensurate with the efforts, due to the individualism of the actors and the lack of will by government decision-makers to effectively support the efforts of those institutions.

The economic reforms of the 1980s and 1990s have opened up a new era for the economic agents involved in the rural sectors. Also, the democratisation process has created a framework that is conducive to the emergence of professional associations in the livestock sector. Today these organisations vigorously defend the interests of their members. They have begun to join together in federations at the national and regional levels. This momentum can be seen in the production, processing, and marketing chains of animal products. A systems approach to animal production is gaining ground among actors in the livestock sector within each country and more recently, although incipiently, in the SWA Region.

2. Organisation of the actors—a prerequisite for change in livestock production

Organisation of the social actors is an indispensable prerequisite for technical, economic, and socio-political change (Lloyd, 1975; Le Nay *et al.*, 1991). Aware that social capital is now a factor in the improvement of technical and economic performance, agricultural operators and, in particular, livestock operators are banding together in associations, cooperatives, or economic interest groups. This new momentum has promoted the development of a number of livestock chains in the SWA. The most visible chains in trade at the regional and international levels are:

- The animal-meat chain
- The poultry chain (traditional and modern)
- The hides and skins chain

Discussions with national institutions and operators in the region confirm the important place and role played by the animal-meat, poultry (traditional and modern), and hides and skins (raw or semi-processed) chains in subregional supplies and trade. Alongside these chains which concern the regional market, the dairy chain is always seeking a national development strategy in the different countries of the region.

Organisation of the direct actors in the animal production chains is supported by public authorities (governments, subregional institutions, bilateral and multilateral partners). The latter are aware of the economic and political importance of livestock production and are organised to better reinforce the technical, commercial, and information capacity of the direct actors in the chains. A number of countries are beginning to give more importance to the livestock sector by creating ministries to design policies and lead the

sector, which had long been buried in the ministries of agriculture. This is the case in Burkina Faso, Mali, and Niger, Senegal and even in Côte d'Ivoire. The objective is to raise the visibility of livestock production and spur momentum in this sector, which is important in many respects. Starting in the mid-1990s, multi-year policies to develop the sector have been designed in several SWA countries (MRA/Burkina Faso, 1997; MEP/Mali, 2004, MRA/Niger, 2001, ME/Senegal, 2004).

But the livestock sector also faces difficulties in finding competent human resources able to help implement the policies. Governments no longer recruit staff and existing human resources (animal technicians and veterinarians) are insufficient. The privatisation of veterinary services undertaken by governments requires support to make them more operational and more effective. Regulatory frameworks need to be developed that are more beneficial for veterinarians and animal technicians. In countries such as Benin, Mali and Togo the regulations authorise animal technicians to work as veterinarians. But in Burkina Faso, steps in this direction have not yet been regulated. Private veterinarians, who are few and far between, establish themselves in cities and do not like to work on the outskirts because government services compete with them in the field. Apart from these considerations, the human resources of the ministries responsible for livestock are basically composed of veterinarians and animal technicians, despite the fact that the technical and socio-economic knowledge needed for livestock production requires support from the economic and social sciences. It is therefore essential to promote a multi-disciplinary approach in the composition of teams of policy makers and technicians in the livestock sector of the SWA countries. That would make for better knowledge of the actors, their socio-productive organisations, and their microeconomic operations, which are the essential platforms for true change in this major productive sector for the region's economies. Furthermore, organisation of the actors as the foremost factor in steering the livestock sector toward more productive and economically profitable and ecologically stable systems is not solely the concern of institutional actors; nongovernmental actors have understood this and are organising to follow the current.

3. Types of sector organisations

In West Africa, an analysis of the structure of animal production chains has identified a host of actors and products placed on the market through different trade circuits. For each animal species and each product there is a chain with actors involved at every link. Specialisation by product is the rule, as noted by Renard *et al.* (2004). A cattle exporter is not involved with sheep and goats any more than a beef butcher is.

Actors in the animal production chains can be grouped according to their main functions. In general, agricultural chains involve three main groups of functions (production, marketing, and/or processing) before the product reaches the consumer. In the case of animal production chains in West Africa, these three functions are performed by actors who are nominally different but who in practice perform several functions at

once. However, this breakdown is useful to facilitate the analysis and simplify the organisational complexity of animal production chains.

3.1 Producers—a productive system undergoing change

Production is organised around raising ruminants and animals with short life cycles and is predominantly practiced by the *Fulbé*, *Targui*, *Arabes*, and *Toubous* ethnic groups. In the absence of formal surveys, the information obtained during this study suggests that producers are mainly rural dwellers. However, more intensive forms of production have been appearing in the last dozen years or so, in which the actors are urban. This new category of producers, known as “Sunday farmers,” produces milk on the urban periphery and is mainly composed of senior bureaucrats or large merchants, particularly in Burkina Faso, Mali, Senegal, etc. They use native African breeds (Goudali, Azawak) and practice artificial or natural insemination using exotic breeds. Some have blatantly imported genetic resources from Europe or South America, particularly Brazil¹.

Short-cycle animal production is carried out by two types of actors: farmers and new actors who are increasingly investing in rearing poultry or hogs. Intensive poultry farming is considerably more developed in Gulf of Guinea countries or the Atlantic coast, where there is a broader range of dietary opportunities to develop. The actors in this chain are generally women, particularly in Côte d’Ivoire and Senegal.

Generally speaking, SWA producers are socio-economically very heterogeneous. This affects the individual producers’ bargaining power. The establishment of associations, cooperatives, or economic interest groups is the only way to increase that power.

3.2 Producers who band together in a country to increase their strength

In the SWA countries, producers’ organisations take various forms which generally start at the local level (towns, provinces/departments, districts, regions) to culminate at the national level in federations of local units and, finally, at the regional level, where national units form groups. This study focuses on regional groups, but the information may be taken from national groupings.

Producers involved in modern poultry and hog farming are organised into socio-vocational structures (MDA, MPE). These structures make a relatively significant contribution to the productive functions of their members by providing inputs. In some countries, such as Burkina Faso, Côte d’Ivoire, and Senegal, they are actively involved

¹ For example, in 2005 the Customs Service and the DPRAs of Burkina Faso recorded the import of 1,872 mules from Niger, 168 greater cane rats from Benin, 2,467 head of cattle from Brazil, Mali, and Niger, 145 sheep from Mali and Niger, and 22,790 poultry from Ghana, the Netherlands, the United Kingdom, and France. These imports are on the rise, either to provide fresh blood in herds (cattle and sheep) or for purebred production (modern poultry farming).

in operations. They have the advantage of bringing together socio-vocational categories that are generally 'educated' and resolutely profit-driven, which can facilitate common actions, including group procurements and financing. However, the structures are still ineffective when it comes to supporting their members in applying for individual loans. That is because bankers still do not see the advantage of adapting their loans to livestock production cycles. For example, an egg producer can only begin to repay his loan after nine months, while bankers often require payments begin the month following the loan.

Cattle producers have the same problem as poultry farmers. They report that bankers require payments begin the second month after the loan, while they need to complete at least three feedlot cycles a year (nine months) before they are in a position to repay¹.

Aside from these categories of producers, herders form the largest production group in the zone studied. Relatively large associations have emerged in some countries, for example *l'Association pour la Promotion de l'Élevage au Sahel et en Savane*² (APESS) (see Box 8). This association, which was created in the early 1990s and is financed by the Swiss Agency for Development and Cooperation, is active in Burkina Faso, Cameroon, Mali, Niger, Nigeria, and Senegal. It is headquartered in Dori, Burkina Faso, and has offices in Tambacounda, Senegal, Adamaoua, Cameroon, in the Mali delta, and throughout northern Nigeria, where most of the federation's cattle production is concentrated³. *The Directoire des femmes en élevage*⁴ (DINFEL) of Senegal involved in dairy production. The association is well entrenched throughout Senegal and is a member of the *Conseil National de Concertation et de coopération des Ruraux*⁵ (CNCR)⁶.

Based on the information obtained, it is worth noting that the organisational initiatives under way do not play any particular role in the productive activities of their members, given the disparate nature of the activities carried out by their members in rural and peripheral urban zones.

3.3 Livestock and meat traders

Traders of livestock and animal products (milk, eggs, hides and skins) form a second group of actors, in which there are two distinct sub-groups—collectors and actual traders.

¹ Field interviews with feedlot operators in Mali and Burkina Faso.

² Association for the Promotion of Livestock Production in the Sahel and the Savannah

³ In Nigeria, APESS is headed by a former president of the Nigerian Federation who belongs to the Fulani social group.

⁴ Female Livestock Producers Directorate

⁵ National Rural Interests Coordination Council

⁶ Senegal is the West African country with the largest number of associations, economic interest groups, and federations of livestock operators.

Box 8. AP ESS

Technical objective

AP ESS' technical vision is to support the spread of new practices to help producers adapt to the new contextual conditions: disappearance of open spaces, degradation of the natural productive potential, expansion of crop farming, etc. The 'technological package' involves the promotion of: (a) harvesting brush, use of animal-drawn carts, and storage of hay in adapted sheds; (b) fodder growing; (c) improvement of dairy production and processing hygiene; and (d) animal selection.

Socio-cultural objectives/expectations

The many objectives focus primarily on raising awareness to cope with the severe agroclimatic changes and the changing world economy. AP ESS also works to integrate herders into the logic of the market while keeping in mind their socio-cultural and religious references. AP ESS promotes solidarity among the Fulbé people by publishing an illustrated newspaper written in French and Arabic, which is very well received and widely circulated in herding circles. Its title "Jawdi Men" means "Our Wealth" in Fulfulde.

The main criticism of AP ESS is its deep ethnic divide. Nonetheless, AP ESS is an ideal channel for reaching herders and working to gradually include them in the dynamics of the transformation in cattle production in West and Central Africa.

Prospects

ECOWAS can also draw on the association when thinking about how to improve the insertion of herders into the dynamics of regional integration, helping them to band together in regional federations, either as a federated association or as members of the Réseau des Organisations Paysannes et des Producteurs Agricoles de L'Afrique de l'Ouest¹ (ROPPA) which has a larger base.

¹ Network of Rural and Agricultural Producers' Organisations of West Africa

Collectors attend cattle markets in the different countries to assemble ruminants (cattle, sheep, goats) or their products (hides and skins) and other short-cycle animal species and their products (poultry, eggs). They are generally commissioned by traders and receive commissions from their 'employers.' Membership in this sub-group is transitory and occurs because the collectors do not have the financial means to engage in trade on their own account.

Although traders in live animals, animal products and/or by-products in West Africa have had communications channels for some time under the *Projet de Fluidification des Echanges et Rapprochement des Politiques Agro-alimentaires*¹ (FERAP) supported by

¹ Project for the Free Flow of Trade and Agri-food Policy Harmonisation

the CILSS between 1990 and 1997, they still have not come up with common strategies for consensual marketing, particularly as far as actors in the meat-supplying countries (Burkina Faso, Mali, Niger) are concerned. *The Cadres Nationaux de Concertation*¹ (CNC) have all but disappeared. Trading continues to be informal with each individual developing their own policy.

A number of traders active in the region have acknowledged that there are no contractual arrangements between livestock producers and traders or between traders from the Sahel countries and livestock/meat traders in the Coastal countries.

Apparently transactions take place between actors who know each other well, use their own information circuits on export markets, and refuse to go through official structures that support the private sector. Case in point, Burkina Faso and Mali. The *Union Nationale des Commerçants et Exportateurs de Bétail*² (UNACEB) and the *Coopérative de Commercialisation du Bétail pour l'Approvisionnement de l'Abattoir de Sikasso*³ (COBASS) strive to find solutions to certain constraints faced by livestock exporters, where the authorities have not yet provided timely support. However, the presence of middlemen⁴ who operate in the informal sector contributes more today to increasing prices than to facilitating trade, which increases the transaction costs of shipping livestock to the coastal countries. This relates to the fact that the information system on regional markets is not sufficiently developed. The *Projet sur les Réseaux régionaux de systèmes d'information de marchés agricoles au service des organisations des commerçants en Afrique de l'Ouest*⁵ (MISTOWA) is working to remedy this shortcoming.

Finally, considerable progress is still required in coordination and making formal contractual arrangements for procurements and supplies in countries that buy meat or live animals. This situation has many causes, with the most important being:

- i. Persistence of the informal nature of the activity, marked by the scant openness of existing networks.
- ii. The lack of financing for trade in livestock, which is considered a high-risk activity.
- iii. Transportation conditions which result in mortality rates of between 2% and 4%, with the consequent performance losses.

¹ National Coordination Committees

² National Union of Livestock Traders and Exporters

³ Sikasso Slaughterhouse Livestock Supply Cooperative

⁴ Formerly, these middlemen played an important role in facilitating trade, saving exporters time and money when checkpoints proliferated on the Côte d'Ivoire route. Today, the myriad of actors at end markets are inescapable for anyone wanting to sell animals. It has become almost compulsory to go through them in Burkina Faso, Mali, and Niger where they are known as "Dhilali." Otherwise, there is a high risk it will take a long time before livestock is moved and a long time before payment is received. All these middlemen feather their nests from livestock sales, sometimes receiving large sums.

⁵ Project on regional information systems on agricultural markets for traders organisations in West Africa.

4. The processing segment and its actors

4.1 Conditions from 1970 to the present

Processing is an activity that requires establishments (slaughterhouses, mini-dairies, butcher shops). Meat and other meat products follow physical and physiological laws and therefore they can be affected by hot weather, which is why appropriate means of conservation and transport are required. The economic actors involved in butchering are wholesaler slaughterers or butchers (*chevillards*), retail slaughterers, and retail butchers (CEBV, 1974). Once the meat is made available, other economic actors come into play, i.e. the secondary processors, including rotisseurs, butchers, and restaurateurs. In the dairy sector, small operators coexist with new actors who have introduced powdered milk processing in a number of countries since the 1970s (Mali, Niger, Senegal). In some countries, such as Burkina Faso, other initiatives such as soy-based milk substitutes were introduced in 1975. In any event, after the 1990s, a new start was made with the rise of dairies to process local milk.

Slaughterhouses and expert services

Slaughterhouses are divided into three main groups in the SWA subregion: refrigerated slaughterhouses, secondary slaughterhouses, and areas where animals are slaughtered. They are places for economic transactions where considerable sums change hands between wholesalers, retailers, and meat exporters. This group is very active, hence public authorities began very early to work for better organisation of these operators, introducing quality control systems that are the responsibility of veterinary services. These tools exist in all SWA countries and they are operational.

Butchering: astride traditional and modern practices

(i) National or public sector meat exporters

Meat is a powerful factor for subregional socio-economic integration. In this regard, it should be noted that during the 1970s, the CEBV prepared instruments on meat quality (CEBV, 1971) and on the harmonisation of customs regulations applicable to the import, export, and transit of livestock and meat in the Community members. The goal was to facilitate trade in meat products. A decision was also reached on grade stamps to indicate the quality of meat (CEBV, 1972). The series of agreements and decisions was adopted by the WAEC, which adapted them to its own quality stamp. In this favourable legal environment, between 1974 and 1990, the Sahel countries (Burkina Faso, Mali, Niger) built refrigerated abattoirs up to the standards for exporting meat in the countries of the subregion (Benin, Côte d'Ivoire, Ghana, Nigeria, Togo). This opportunity to export meat, which reduced the surcharges linked to rogue taxation on export routes, drifted away due to poor company management. The main government-owned

companies—ONERA in Burkina Faso, OMBVI in Mali, and SONERAN in Niger—went bankrupt for very obvious reasons when the Structural Adjustment Programmes were introduced¹.

(ii) The current situation

Today, new initiatives are under way, supported by the governments of Burkina Faso, Mali, and Niger in response to pressure from actors in the livestock and meat products sector.

In Burkina Faso, the refrigerated abattoir in Ouagadougou has been rehabilitated and subjected to health and hygiene standards to develop exports. The *Société du Bétail et de la Viande*² (SOBEVI) is just starting up. It appears that it will be dominated by the Burkina private sector³. Meat will be exported as carcasses from the Ouagadougou abattoir, which has two lines for large animals with an estimated capacity of 400 head/day; a line for sheep and goats with a capacity of 900 head/day, and a line for hogs with a capacity of 200 head/day. But exports have not yet begun and there are a number of reasons why. The Sahelian meat consuming countries prefer live animals so they can process the fifth quarter, given that the feet and hides are consumed in the coastal countries. Some analysts believe that the shipping costs will be so high that the meat may not be competitive with other meat, particularly European meat, given the Economic Partnership Agreements between the European Union and West Africa, which are about to be concluded. It should also be noted that the coastal countries have made significant investments in slaughterhouse infrastructure. Promoting meat exports is not profitable for them. This is one of the reasons for their resistance and their preference for live animals.

Niger appears to have made progress. The mission's interviews with actors indicate that exports are already taking place. Private parties from Gabon in association with Nigerian nationals have established two companies that export cuts of meat: BIODIX and VIVANDA. These two companies export to Niger's coastal neighbours (SWAC,

¹ The reasons for the bankruptcy of ONERA (Burkina Faso) were: (a) the marketers were basically bureaucrats with no deep understanding of the market sub-segments in the consumer countries and, above all, with no expertise, which led to considerable financial losses when products were shipped; (b) shipping, which should have been contracted out, continued to be performed by the company and included the cost of maintaining the refrigerated vehicles, which reduced profits; (c) the absence of a long-term vision.

² The reasons for the bankruptcy of SONERAN (Niger) were: unlike ONERA, SONERAN in Niger avoided falling prey to the meat shipping company by contracting shipping with a national transport company. Exports were going well with a slaughter capacity of 250 animals a day, weighing an average of 500 kg. The activity was halted on the recommendation of the Structural Adjustment Programme for Niger in the 1990s. However, the truth is that poor financial and commercial management lie behind the bankruptcy of the company, which had to be liquidated.

³ Livestock and Meat Products Company

³ Verbal communication by the Secretary General of the Ministry of Animal Resources of Burkina Faso to the mission.

2006). They also have markets in Equatorial Guinea and Gabon. The operating principle is to slaughter well-fattened animals at the Niamey abattoir and to butcher them in their own installations¹.

In Mali, investments are being made in two abattoirs to bring them up to international standards with a view to developing meat exports. Interviews with the technical services indicate that meat exports have already begun, in small quantities for the moment. A problem exists with the means of transport used, i.e. aircraft, whose costs are high. Private investors, who are the majority shareholders, will manage operations.

In short, the policy makers in the Sahel countries demonstrated the will to move toward exporting meat. This supposes that the agreements already reached by the CEBV and the WAEC will be taken over by ECOWAS, acting as a commission. This institutional arrangement gives it a free hand to establish a new organisation of livestock and meat operations that will be easier to impose on all the member States.

(iii) Butchers' organisations and structures

In all the SWA countries, the butchering trades are well defined in the instruments (CEBV/UEMOA, 1999) :

- Wholesalers who slaughter a number of head a day to sell to retailers, butchers, and restaurateurs.
- Retail-slaughters who do not have large operations but who slaughter small quantities every day for direct sale to the market. They work on their own account from the time they purchase the animals to the sale of products to consumers. Some in this group operate shops selling grilled meat (*dibiteries*) or have traditional roasting ovens, particularly for mutton and goat.
- Retail butchers who are small meat retailers in markets in large cities and neighbourhoods. This type of butcher shop is protected by screens to stop flies from getting in. But given the heat, some sell their meat outside of these infrastructures, which can lead to its contamination. Also, sale by weight isn't the rule in all countries. One example is Burkina Faso, where meat is still sold in mounds, whose cost ranges from 300 CFA francs to 500 CFA francs each.

Burkina Faso has some way to go to improve the structure of butchers' trades and develop sales by weight, as in Côte d'Ivoire, Mali, Niger, and Senegal.

¹ Recent information obtained by the mission reports the approval and start up of a project to build a new modern abattoir with a 20,000 tonne capacity that meets international standards, and the establishment of a slaughterhouse management company with private capital that, by and large, will resume the modus operandi of SONERAN by organising the collection, stocking, and finishing necessary to supply the new abattoir and to market meat exports (MRA, 2006).

A recent study in Burkina Faso (MRA, 2007) shows that in the refrigerated slaughterhouses in Ouagadougou, Dédougou, and Bobo-Dioulasso, all operators are “certified butchers.” Regardless of whether an abattoir slaughters just one or 50 head of cattle, 2 goats, or 500 sheep a day, the rules applicable to it are the same. This is a constraint on the smooth operation of abattoirs and butchering trades. The consequence is anarchy in the abattoirs, which makes it impossible for leading actors to emerge capable of dealing with a subregional market, even though efforts to establish a national union of beef and pork butchers (UNABOC) have been under way since 1997. The organisation is satisfactory at the national level, but its members are mainly small actors who do not have the wherewithal to export meat. Furthermore, their leaders are much more interested in exporting live animals.

In the cases of Mali and Niger, the stratification of trades is fairly well respected. Only the large certified butchers are able to slaughter in abattoirs. They then deliver the meat to retail butchers. They often work under very short-term credit, which is repaid at the end of the day or the next morning, before taking possession of a new delivery. This group includes the majority of livestock producing countries with emerging wholesale butcheries. They require support so they can band together to export carcasses, given that African consumers prefer to buy meat that is cut up in front of them.

Despite the shortcomings related to the organisation of actors in abattoirs, they appear to be interested in banding together on the basis of their size. Although exporters of live animals predominate, meat processors have a presence in associations and unions in a number of SWA countries.

The situation in Senegal is different. Although the country imports livestock to meet demand for meat, it has a national association of livestock and meat operators (ANPROBVIS) that is a true workers’ union. It is an association that can order abattoirs throughout Senegal to stop work. It is not unusual for it to engage in tugs-of-war with the Senegalese authorities, sometimes decreeing “Senegal without meat” for a number of days. ANAPROBVIS is a real tool in the hands of meat operators to bring pressure on decision makers, which can extend to the suppression of low-quality meat imports from Europe and South America.

(iv) Butchers

These operators work in grocery stores, processing meat and increasing its value. This speciality is scantily developed in the Sahel countries. In Burkina Faso there are a number of grocery stores, including Marina Market and Palais des Viandes, that offer modern charcuterie. Marina Market has spread to Niger where it also butchers meat for local consumption. In contrast, charcuterie is well developed in the coastal countries of Côte d’Ivoire, Ghana, and Togo. Integrated animal production operations (poultry, hogs) exist that extend to processing. The main problem with this kind of finished product is

that it is too expensive for modest incomes. Butchers have a very specific clientele who form a niche market for this type of product.

(v) Grillers/roisseurs/*dibitiers*

This category of actors forms the largest group. They have small cottage-type units to cook meat (beef, mutton, goat, pork, and poultry). They are mainly found in large urban centres. The grillers and *dibitiers*, are mainly small economic actors who do not slaughter the animals. They buy sheep and goat carcasses from wholesale butchers in the large urban centres. In contrast, in countries such as Mali, Niger and Senegal, grillers or *dibitiers* are generally the large wholesalers who slaughter animals, retaining some for their grilling sites or *dibits*, depending on the country. Some large *dibitiers* in Mali, Niger, Nigeria, and Senegal can sell between 20 and 30 sheep and goat carcasses a day.

The rotisserie sub-segment is mainly concerned with pork. This manner of preparing meat is highly developed in Burkina Faso. Exports of these cooked meats are not well developed, but over the last five years, some roisseurs, with support from the project to promote bio-foods, have benefited from assistance that has allowed them to set up in the abattoir in Ouagadougou where they sell smoked or roasted chicken to passers-by. The recent avian flu crisis appears to have adversely affected this activity.

In the area of processed meats, Nigeria's *kilichi* is beef cut into thin slices and dried in the sun. It can be preserved in good condition for several weeks, in the absence of humidity. These products are exported in the subregion and Nigerian *kilichi* is recognised as an African food. Work is being done in Niger to develop gas drying to reduce the risk of contamination by pathogens.

Box 9. Dairy products in the traditional system

In Niger, the Fulbé people produce the durable Tchoukou cheese, a product that can be kept for several months. Efforts should be made to assist actors in mastering simple processes of this kind in the context of cottage-type technology. In the coastal countries, particularly Benin, Fula women have developed a long tradition of making a durable cheese known as "Benin cheese" which is easy to make using simple techniques. The special nature of this cheese lies in the use of a wild plant (found throughout the Sahel) to coagulate the milk. The plant is Calotropis procera known by the common name of Sodom apple, whose sap is used for coagulation. The cheese can be eaten fresh or cooked in oil and used to prepare sauces. Other countries that have mastered the technique include Ghana and Togo. Efforts can be made to promote the technique, which could be used to process surpluses in the rainy season.

(vi) Restaurateurs

This last sub-segment is operated by women who run food stalls and economical eateries in the large urban centres in the SWA zones. They cook or roast beef, mutton, goat, and poultry. In some countries, the meat is cooked in sauce and served with cereal grains (rice, millet cakes, etc.). In some coastal countries, meat is sold today separately from the main dish. Certain institutions, such as the armed forces and hospitals, also buy meat every day so they can prepare meals for soldiers and patients.

The jobs of butchers, grillers, *dibitiers*, and rotisseurs are important. They offer ready-to-eat products but those products can pose a danger to human health. It is therefore necessary to insist on good hygiene to prevent customers from falling ill. Actions to control foodstuffs of animal origin are in place in all countries, but they must be stepped up. Individuals involved in these trades should be required to pay annual visits to the doctor. Doctors' visits already take place but need to be more widespread. Furthermore, the *dibiteries* need to be upgraded, given that they are makeshift installations in most countries, except for Mali and Senegal where the operators are required to grill their meat in enclosed areas to avoid exposing it to dust, which is a leading medium through which many pathogens spread.

Table 13. Statistics on hides and skins processed and officially exported (kg)

Product	Cattle	Goats	Sheep	Total
Semi-tanned skins	2,500			2,500
Semi-tanned hides		1,232,930	11,7000	1,349,930

Source: Livestock Statistics, MRA, Burkina Faso, 2005

4.2 Local milk processing

The local milk chain is currently seeking a national development strategy in the different countries of the SWA region. The actors who process this product belong to the traditional dairy system of pastoral peoples (see Box 9). In this field, the activity is performed by women who are the interface between the farm and the market. A second system being developed, which includes improved peripheral urban systems, and the dairy farm system is beginning to establish upgraded mini-dairies.

In the traditional dairy system, the functions of collecting and processing are not separated. Women are the main actors and are largely responsible for processing the milk after they have collected it. Products vary from one country to another. The most frequent are curds, *fèné* or cream, butter, and Fula soap. These products have a short life span in the hot climates of most of the SWA countries. However, there is local knowledge in some countries that should be explored for the purpose of extending it to other countries.

Apart from the traditional processes, after a dozen years of work to promote dairy systems to supply the large urban centres, dairies that use modern technologies and mini-dairies that use cottage-type processes are springing up everywhere in West Africa.

The new initiatives involving mini-dairies in towns and regions in many SWA countries (Burkina Faso, Mali, Niger, Senegal) are operated by women organised into associations. They produce yoghurt, pasteurised milk, and butter. Today, food stalls carry products made in these countries, which are well accepted by consumers. Far from reversing the trend toward imports, these initiatives allow women to earn income and contribute to national food security and nutrition policies in the countries.

The industrial mini-dairies, which have been built in some countries such as Burkina Faso to process local milk, do not produce returns commensurate with the investments. That is due to the bureaucratic attitude that infuses their management. Putting them in private hands could improve economic performance in terms of the profitability of these units.

4.3 Hides and skins processors

As for hides and skins, processors can be divided into two categories—cottage-type and industrial.

(i) Industrial processors

The hides industry is making advances in the SWA zone, particularly in countries such as Burkina Faso and Nigeria, where industrial processing is being developed. In Burkina Faso, for example, the TANALIZ company now works on a subregional scale given that it collects in several Sahel countries (Mali, Niger) in addition to Burkina Faso. TANALIZ has recently bought a tannery in Niger which it is refurbishing. Development of this industry will reduce distances between the point of collection and the tannery and will create jobs.

In the other livestock-rearing countries, particularly Mali and Niger, industrial processing is not well established among private promoters. Hides and leather are exported by the nationals of those countries and are collected and bought by TANALIZ, which processes them in its tannery in Burkina Faso prior to exporting them. Statistics for Burkina Faso on processed hides and skins that enter an export circuit controlled by livestock services are shown in Table 13.

The most important destination is the Nigerian state of Kano, where the hides industry is well developed with more than 20 tanneries. Apart from Nigeria, exports are also made to Western countries (Germany, Italy, United States, etc.) as well as Nigeria. This is a dynamic industrial chain.

(ii) Cottage-type processors

The hides and skins produced in West Africa, particularly in the main livestock-rearing countries, also enter the leatherwork circuit on an artisanal scale.

The town of Kaya in Burkina Faso is involved in the manufacturing of hand-crafted objects such as handbags, shoes, and belts. The actors are organised into three dynamic associations, two in the field of leatherwork and one in the field of tanning.

Niger has a craft centre that is known world-wide. The hides and skins are transformed into different objects (handbags, shoes, etc.). The degree of perfection is such that it

Table 14. Summary of drawbacks/opportunities and areas in which the capacity of the actors and their organisations should be built up

Field of action	Forces/opportunities	Areas in which capacity should be built up
National producers	Membership in national federations of livestock and meat trades and, in some cases, in national agriculture councils. National federations that are members of ROPPA and are capable of protecting their interests in ECOWAS territory. Varied animal genetic resources. Training for members of national federations through NGO programmes. Participation by national and subregional leaders in meetings, training workshops, seminars, internships, etc.	Insufficient training and information on production techniques, design of micro-projects, markets, and prices. High illiteracy rate among the members of national federations. Weak managerial capacity of leaders of rural organisations.
Regional apex organisations of or including producers	Presence of ROPPA which has broad regional coverage. Attempt to establish a regional federation in the UEMOA countries.	Support in organisational management.
National exporters	Membership in the <i>Réseau des Opérateurs Economiques du secteur agroalimentaire</i> (ROESAO).	Training in Internet tools, in communications and information on regional markets; information on the laws and tax requirements of buyer countries and on SPS rules; support in preparing the documents for procuring suitable means of transport.

is difficult to tell the difference between products made at the Niamey centre from products made in Italy.

The chain is dynamic. However, that should not be allowed to mask the difficulties, which stem from the lack of expertise among the actors involved after the production stage. The hides are often disfigured by holes, which mean that they must be turned into edible leather for export to the countries of the subregion (Ghana, Nigeria, Togo). To improve actors' skills, a subregional project involving Burkina Faso, Mali, Niger, and Senegal, has been undertaken with financial support from the United Nations Industrial Development Organization (UNIDO). The goal is to train actors to produce good-quality hides (Djibrillou, A., 2002 and 2004) and support the satisfactory operation of the Association des professionnels des cuirs et peaux de l'Afrique¹.

In short, to overcome the constraints and make the most of opportunities, the direct actors in the animal production chains require technical, financial, and organisational support from governments and regional integration institutions. Food and nutritional security, which is a condition for the other stages of socio-economic development, requires the development of local chains. Industrial fluidity can be established in the SWA countries by reorganising production. Subregional integration also means striking a balance among countries that join together. The countries in the interior should be able to sell meat instead of live animals so that they too can build up profitable processing operations instead of exporting raw materials as in colonial times. They require well-trained and well-equipped people to be able to produce more processed goods.

In effect, the significant changes in social capital in the West African livestock sector are linked to the involvement of direct actors, but there are also many indirect actors who provide support for their development and empowerment with regard to government structures. The indirect actors in developing trade in animal products include regional institutions, projects and programmes, and international NGOs. The following section examines the strengths and weaknesses of these indirect actors.

5. A variety of indirect actors who should be better coordinated

An institutional environment is present in the countries, taken individually, and at the regional level, that could help the livestock sector to respond to demand for meat products in the region.

5.1 Livestock ministries and technical services

As mentioned earlier, ministerial institutions are emerging that work full time on livestock development. This process has enabled countries to establish long-term development policies for the sector (MRA/BF, 1997; MRA/N, MEP/M, 2004; ME/S, 2004).

¹ African Hides and Skins Trade Association

These policies are intended to make livestock farming more productive by improving production conditions for farmers through phenotypic selection programmes and genetic improvement practices with the aid of exotic breeds.

Apart from productive considerations, all these policies involve support for the organisation of actors in the different chains and, particularly, access to national and regional markets. But the insufficient budgets assigned to the ministries of livestock continue to be a recurring problem. This concerns public authorities as well as national and international financing institutions. In particular, livestock has had very little visibility in the funding granted by international institutions, at least until recently.

Given the imbalances in the distribution of financing among the rural productive sectors, in some countries such as Nigeria, authorities have chosen to clearly distinguish the amounts allocated to the livestock sector from those allocated to other specific areas¹. This is a good approach because it makes it easier to understand interventions in the sector.

Major efforts have also been made in the field of animal health and the reinforcement of national veterinary services thanks to the support provided by the *Programme panafricain de lutte contre les épizooties*² (PACE). One important aspect that could be included in the process of promoting subregional trade relates to vaccine production. In this field, a number of laboratories are capable of producing vaccines against diseases that afflict the ECOWAS region. For example, the livestock diagnostic laboratories in Mali, Niger, Nigeria, and Senegal can or already do produce a number of different vaccines, particularly for local use. Interaction in the field of vaccines already exists between Niger and Nigeria. Burkina Faso imports vaccines from Mali and Senegal. This is an opportunity for market integration of production factors. Under UEMOA and ECOWAS, it is envisaged that the production capacity of the above-mentioned laboratories will be stepped up so they can supply the region as a whole. One of the visible gaps is the need to strengthen laboratories in the quality control of human and veterinary medicines. A recent audit of veterinary medicine quality control laboratories located in the UEMOA zone indicates that: (i) not all member countries currently have a laboratory capacity of controlling the quality of veterinary medicines, (ii) just seven laboratories currently have the capacity to acceptably control the quality of veterinary pharmaceuticals, and two are able to control the quality of veterinary vaccines, (iii) it is therefore necessary to establish a network that will initially involve these nine laboratories (Boisseau, J., July 2005).

¹ Verbal communication to the mission by the Federal Department of Livestock and Pest Control Services, Federal Ministry of Agriculture and Rural Development, 18 September 2006.

² Pan-African Programme to Combat Animal Epidemics

Box 10. The Economic Community for Meat and Livestock (CEBV)

Birth of an economic cooperation institution

The CEBV, which was headquartered in Ouagadougou, aimed to respond to the basic objectives of the Entente Council which consisted of the economic promotion of its member States, particularly the rural environment and its population, meeting nutritional requirements, particularly with respect to animal protein, and promoting in a regional context, the production and sale of livestock and meat within member States, between members States, and to third parties, regardless of whether they shared common borders (CEBV, 1983).

The results achieved in 27 years

- *Financing and coordinating programmes to combat rinderpest and supporting veterinary coordination, which reduced the economic impact of the disease.*
- *Introducing the livestock passport and re-activating the livestock corridors helped develop pastoralism and reduce theft and conflicts between crop and livestock farmers.*
- *Supporting the opening of a branch of the l'Institut d'Élevage et de Médecine Vétérinaire des Pays Tropicaux (IEMVT) [Institute of Tropical Breeding and Veterinary Medicine] in Bobo-Dioulasso in 1975. The branch, with its influence in the Entente Council area, was able to considerably reduce the incidence of the tsetse fly in Bobo-Dioulasso and the northern Côte d'Ivoire, promoting the establishment of a number of Fula communities in that area (Bernardet, 1984).*
- *The CEBV was the principal institution that led to the creation of the Centre International de Recherche sur le Développement de l'Élevage en Savanes humides (CIRDES) [International Centre for Subhumid Livestock Research and Development] headquartered in Bobo-Dioulasso.*

From the decline to absorption by UEMOA

Like a number of regional integration institutions in Africa, the CEBV lacked financial and human resources, among other problems. The institution's contracting States were never able on their own to carry out the tasks that are essential for the development of the sector, always relying on the help of the international community. For all its actions and sometimes even to ensure that the basic structure could operate, it was necessary to call on France or other donors. Under these conditions, it was difficult to implement a sovereign policy (Sanon, 2003). Despite its effectiveness, the CEBV was absorbed by UEMOA because the new institution is easier to sell today to donor agencies. The overall results achieved by CEBV, particularly the animal passport, are also losing momentum. The passport is a document that permits a cattle farmer or dealer to avoid customs and police harassment at borders. Unfortunately, this mechanism is no longer functional. Livestock exporters who hold such passports are still subject to extortion by law enforcement authorities (police, gendarmerie, and sometimes even foresters who have nothing to do with livestock exports). Livestock farmers in possession of a transhumance certificate are hounded in countries that have signed the agreements and never repudiated them.

Actions that have survived the institution's disappearance

The livestock passport and the transhumance certificate have been improved and introduced in 15 ECOWAS countries since 1998.

In short, much has been done to improve animal health but much remains to be done, particularly with regard to building the capacity of the institutional actors and improving communications and information channels with herders.

The main demands of the institutions relate to building the capacity of veterinary services in terms of logistics, human resources, and technical assistance in the diagnosis of diseases. In the field, better technical tools should be provided for agents at border posts, including the security forces, for sensitisation and information on actors involved in the trade of livestock and animal products.

5.2 Continental and regional organisations

A number of regional, continental, and international institutions support countries in improving animal production conditions and also in gaining access to financing for the livestock sector. This group of institutional actors helps to prepare policies that promote the transformation of the livestock sector and closer integration of actors into the different chains in the West African marketing circuit.

At the continental level, the African Union/Inter-African Bureau for Animal Resources (AU/IBAR) is the main reference point in support for agricultural development in general and the livestock sector, in particular. At the West African regional level, a number of institutional actors work to improve the standard of living of the population, with the most significant in the area of political, economic, and monetary integration being ECOWAS and UEMOA¹.

UEMOA was created in 1994 as a means of curbing the impact of the devaluation of the CFA franc in January of the same year in Dakar. This devaluation of the CFA franc compared to the French franc coincided with the end of the WAEC which, although it had foundered, had already made significant progress, at least invoking the idea of the customs union. This progress also related to the common currency under the West African Monetary Union. In the UEMOA zone, livestock is one of the key economic sectors. Reflecting this importance, UEMOA follows a strategy to develop livestock chains (beef and sheep, hides and skins) and also the poultry chain. Headway has been made and ECOWAS can draw inspiration from it to bolster its agricultural policy, by conducting complementary studies on livestock systems in other countries that are not covered by the UEMOA studies.

This progress made by UEMOA results from the fact that the institution has benefited from the knowledge of certain institutions, such as the Communauté Economique de Bétail et de la Viande (CEBV) [Cattle and Meat Economic Community]. The latter has been one of the instruments for economic cooperation used by the Entente Council which was established in 1959 for exclusively political reasons, i.e. to block the Mali

¹ See Chapter 4 on pastoralism and transhumance.

Federation led by Mali and Senegal which had socialist leanings (Diouf, 1984). Upper Volta was on the verge of joining them. It was not until much later that seeking more mobilising actions would be needed. The CEBV was created in 1970 in the environment of subregional institutions, bringing together Benin, Burkina Faso (former Upper Volta), Côte d'Ivoire, Niger, and Togo. The institution survived from 1970 to 2000, when its activities were transferred to UEMOA (Sanon, 2003). Although the CEBV had encountered many difficulties related to financing and the renewal of human resources, among others, it was successful in developing certain areas of the livestock sector, such as the introduction of a livestock passport and the reactivation of the livestock corridors (see Box 10).

Shortly after the CEBV was created, another institution with a geographic base limited to the Sahel countries, the Permanent Inter-state Committee for Drought Control in the Sahel (CILSS), was given the task of helping to design development policies in different livestock production areas.

Based in Ouagadougou, the CILSS is an institution that is already playing an important role as technical secretariat for ECOWAS' agricultural policy. It has technical and research tools through the Sahel Institute (INSAH) based in Mali, which works on population issues and agro-socio-economic aspects. AGRHYMET based in Niger also plays an important role in weather forecasting. The CILSS promotes programmes in which the management of transhumance and the reduction of conflicts over access to resources are central concerns.

The Niger Basin Authority (ABN) is one of the oldest African inter-governmental organisations dating back to 1964, when it was known as the Niger River Commission. It is an institution involving West African countries (Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria) and Central African countries (Cameroon, Chad). The ABN deals with shared water resources of its members, taking concerns over access to water for stock watering and pasture into account.

The Liptako-Gourma Authority (ALG) is a subregional cooperation institution among neighbours, whose mission is the comprehensive and harmonious development of an area covering 370,000 km² that straddles the borders of Burkina Faso, Mali, and Niger, known as Liptako-Gourma. The ALG has been operating in the region for more than 30 years to develop mineral, energy, water, agropastoral and fisheries resources in the intervention zone. A recent programme for livestock development in the zone includes training for producers, water and animal health infrastructure, and pastoral planning. Momentum exists for the indirect actors in the livestock sector to band together which, at present, depends heavily on external financing. This poses the problem of the sustainability of the actions undertaken on behalf of the direct actors in the sector, given their scant financial, technical, and operational resources. If the combining of ideas is a strength, combining resources enables this strength to be maintained. The different

institutions should build strategies to boost resource mobilisation and reduce their dependency on external institutions for financing.

5.3 Subregional projects and programmes

There are other institutional actors that do not necessarily belong to the institutions mentioned earlier. They are projects and/or programmes whose financing and implementation modes often lie outside national and/or regional institutions, but whose development objectives for the region are similar.

(i) The project to strengthen regional market information systems and traders' organisations in West Africa (MISTOWA).

The project is financed by two bilateral partners—the United States government through USAID and the Netherlands through AGRITERRA. MISTOWA is led by the International Centre for Soil Fertility and Agricultural Development (IFDC-Africa Division). It is intended to promote regional agricultural trade and to boost food security. It is regional in scope, covering the entire ECOWAS area. Launched in September 2004, the project currently covers a number of countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria, Senegal, and Togo). Its actions are intended to link market information systems and services to private sector users and to work with regional partners to study and react to client feedback in order to adapt to their needs. Producers' and traders' organisations are the target public. The approach is based on training through a dialogue network that enables the various actors to obtain sufficient information to help promote production and trade in the subregion. Three networks of direct actors in the livestock sector participate in this project:

- Network of West African Agri-food Sector Economic Operators (ROESAO)
- Network of West African Farmers' and Producers' Organisations (ROPPA)
- The African Federation of Associations for Trade in Agricultural Inputs (FACIA)

(ii) International NGOs

The involvement of international NGOs in the livestock sector dates back to the ecological crisis that lasted from 1968 to 1985 in the Saharan-Saharan belt from the Atlantic Ocean to the Red Sea, after severe droughts that led to famine and economic disaster for crop and livestock farmers (Spittler, 1993; Piguet, 1998). The most active NGOs include ACORD and its member agencies—in particular the Catholic Committee against Hunger and for Development (CCFD), German Agro Action (GAA), OXFAM, *Nederlandse organisatie voor internationale ontwikkelingssamenwerking*¹ (NOVIB), and *Vétérinaires Sans Frontières*² (VSF) (France, Belgium, and Switzerland) (Oxby, 1990).

¹ Netherlands Organisation for International Development Cooperation

² Veterinarians Without Borders

These organisations have worked in particular in the Sahel countries and the Horn of Africa with herders, agropastoralists and former herders because the droughts had completely wiped out certain pastoral groups who needed help rebuilding their livestock or help converting to other activities. The descriptive analysis here is limited to three experiences: (1) Heifer International, headquartered in Ghana and radiating out from there; (2) *Services d'Appui aux Initiatives Locales de Développement*¹ (SAILD) headquartered in Cameroon but extending into many African countries; and (3) OXFAM/Great Britain.

Heifer International (HI)

This NGO covers 41 countries, three of which—Burkina Faso, Cameroon, and Ghana—belong to the SWA countries. Its objective is to combat hunger and poverty by developing livestock rearing through a livestock credit program. The approach is driven by social demand, in other words, the communities chose how to improve their living conditions. Heifer International provides training for producers in sustainable and ecologically balanced agriculture. It promotes knowledge sharing between rural communities through study trips organised for producers from different countries where it is active. It facilitates trade in resources by importing breeder animals from the Sahel countries into the coastal countries to establish starter stock for livestock rearing.

Services d'Appui aux Initiatives Locales de Développement (SAILD)

The poultry industry in Cameroon has suffered from dumping, with imports of frozen chicken parts rising from 978 tonnes in 1998 to 22,154 tonnes in 2003². This situation has threatened the modern farming system and many poultry farmers, particularly women, have given up. With SAILD's help, the poultry farmers belonging to the *Association Citoyenne de Défense des Intérêts Collectifs*³ (ACDIC) have been able to influence Cameroon's authorities who have ended imports of poultry cuts that constituted unfair competition for domestic production. The cuts (wings, tails, feet, backs) are waste that is traditionally recovered by industries that manufacture animal feed and are not of interest to Western consumers, who prefer the soft parts.

OXFAM/Great Britain

The struggle by ACDIC in Cameroon has left its mark elsewhere. Côte d'Ivoire and Senegal were inspired by the experience. Senegal's domestic market, for example, has been flooded with broiler cuts worth 10 billion CFA francs/year and eggs worth 18.7 billion CFA francs/year (Duteurtre et al, 2005). Modern poultry farming in Senegal collapsed between 1998 and 2002. The West African Regional Office of OXFAM/Great Britain responded to the demands of modern poultry farmers³ by organising a national

¹ Services to Support Local Development Initiatives

² Collectifs d'Organisations Non Gouvernementales: CCFD/CFSI/GRET.

³ Citizen's Association for the Protection of Collective Interests

campaign together with the actors. Following the example of Cameroon, the platform included Senegalese NGOs, school and university groups, the main labour unions, consumers' associations, radio stations, women's groups, and local authorities, who were able to bring strong pressure to bear. The Senegalese government heeded the message and ended imports of poultry cuts.

In conclusion, there are two main concerns with regard to the institutional actors in the livestock sector: lack of coordination and insufficient inter-agency communications. ECOWAS established a taskforce in 2000 on the instructions of the Heads of State and Government. It is a technical entity for deliberation and proposals that should enlarge its mandate beyond matters of cross-border transhumance and focus on preparing a general document addressing the direct and indirect actors in the animal production systems in all the member States.

Although a number of national and regional institutions and NGOs are striving to promote the empowerment of actors and different livestock operators, the operators still have little political influence in the design of national and regional policies in the field of livestock. This situation is explained by the fragmentation of actors which, although being a sign of democratic growth, is also a cause of weakness that undermines the cohesion of efforts.

Consequently, a different organisational model should be used. It should promote the organisation of actors in the different production chains into associations. The associations should meet to appoint a national council of livestock sector operators. If the national councils operate normally because they are representative of the collective of actors, without distinction, it is not a necessity to establish a regional body as a pressure group. It is far more important to establish a regional observatory with antennae in the different countries whose leadership would be exercised directly by the national federations.

LIVESTOCK POLICIES AND STRATEGIES FOR RESPONDING TO REGIONAL AND INTERNATIONAL MARKETS CROSSCUTTING ISSUES

1. Financing policies: Support for production and marketing

Financing policies to support production and marketing in the Sahel and West Africa are currently being harmonised. There are large regional groupings (see Table 15) whose role is to assist the countries involved in speeding up regional integration of national economies. To be sustainable and have a positive impact, the reactivation of the livestock sector needs to increase its economic returns, which can be guaranteed by regional organisations, and implies:

- i. Better organisation of production
- ii. Modernisation of circuits
- iii. Closer ties with the rest of the economy

The objectives of the various agreements in force in the study zone are similar, as well as the required tools. However, the extents to which objectives have been attained and the tools that have been made available differ. UEMOA presents some progress compared to the other agreements (ECOWAS, CEMAC). How can the different policies be harmonised and integrated into a coherent space? If harmonisation can be achieved relatively easily between the UEMOA and the ECOWAS countries (given that the UEMOA countries are all members of ECOWAS), the same does not hold true between ECOWAS and the Economic Community of Central African States (CEEAC), whose six member countries that use the CFA franc as their currency form the Economic and Monetary Community of Central Africa (CEMAC).

The groupings should take account of countries that are geographically remote from each other in a different economic climate. National economic development policies, particularly in the livestock sector, need to be devised in a complex context of this kind.

It is assumed that national transhumance policies are based on ECOWAS texts as ECOWAS is currently addressing the transhumance issue.

1.1 Financing policies

Economic development programmes for different sectors exist in the study zone. The programmes have been designed on the basis of Community financing policies. In UEMOA, some programme activities have gotten under way thanks to support from the European Union under the UEMOA support programme (7 ACP 576). The programmes are:

- Coordination and harmonisation of agricultural adjustment policies.
- Financing for agriculture.
- Water control: Integrated management of shared water resources.
- Establishment of a regional information network for technical, commercial, and economic information in the field of agriculture.
- Development of meat production systems: establishment of classification and quality standards for livestock and meat.
- Emergence of trade organisations in the agriculture sector.

The actions mainly involve studies, follow up on validation meetings, and turning the outcomes into Community instruments (recommendations, decisions, directives, or regulations).

The development of meat production systems is supported by the FAO and the UNDP. A regional workshop on the management of genetic resources for farm animals in West Africa was organised under the auspices of UEMOA, CILSS, and CORAF to prepare a regional project.

Table 15. Regional integration agreements in the study zone

Regional integration agreements (date established)	Objectives	Instruments	Comments
UEMOA (1994) Replaces WAEC (1972)	<ol style="list-style-type: none"> 1. To promote cooperation and development through trade projects of Community interest. 2. To introduce a common external tariff. 	<ol style="list-style-type: none"> 1. Single tax (<i>taxe unique</i>) on trade to replace customs duties. 2. Harmonisation of investment rules. 3. Project financing. 	<ol style="list-style-type: none"> 1. Common market not established. 2. The regional preference only extends to 428 products (including animal products). 3. Partial labour mobility.
ECOWAS (1975)	<ol style="list-style-type: none"> 1. To promote economic, social, and cultural cooperation and development. 2. To raise the standard of living in the member countries. 3. To preserve economic stability. 4. To eliminate customs duties and other barriers to trade and create a common market by 1990. 	<ol style="list-style-type: none"> 1. Elimination in 10 years of customs duties and other non-tariff barriers to foreign trade. 2. Adoption of a common external tariff by 1990. 3. Compensation and development fund. 4. Removal of barriers to the free circulation of production factors. 5. Harmonisation of monetary and budget policies. 	<ol style="list-style-type: none"> 1. Trade liberalisation programme not applied to date. 2. No national payments into the compensation and development fund. 3. No labour mobility.
CEMAC (1998) Replaces UDEAC (1964)	<ol style="list-style-type: none"> 1. To promote economic development to raise the standard of living. 2. To establish a customs union. 	<ol style="list-style-type: none"> 1. Single tax (<i>taxe unique</i>) on internal trade to replace customs duties. 2. Elimination of tariff barriers. 3. Joint investments. 	<ol style="list-style-type: none"> 1. No common external tariff. 2. No labour mobility. 3. Large barriers to internal trade.

Source: Adapted from ADB (2000) quoted by Hugon (2002).

The African Development Bank (ADB) is involved in financing livestock farming at the country and regional levels. Information provided to the mission indicates that the ADB supports development in a number of livestock chains, including ruminants and poultry, with a dramatic offensive in the wake of the avian flu crisis. A programme for specific support was carried out in Benin, Burkina Faso, Cameroon, Chad, Ghana, Niger, Nigeria, and, more recently, in Côte d'Ivoire.

One of the main handicaps for the development of livestock farming in humid and sub-humid zones on the continent is African animal trypanosomiasis (AAT). The Bank supports the efforts of the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC) of the African Union to eradicate the tsetse fly in three countries (Burkina Faso, Ghana, and Mali). More recently, it provided financing of US\$26 million (ADB, 2005) for a programme for sustainable management of ruminants in West Africa, supporting a project to conserve animal biodiversity in West Africa (the Gambia, Guinea, Mali, and Senegal). The aim is to prevent the disappearance and dilution of local livestock breeds (the Ndama breed of cattle).

As mentioned earlier, most of the countries in the study zone have given more prominence to the sector by establishing a specific ministry to allocate spending and consolidate leadership of livestock activities. Despite this, the budgets allocated to the ministries in charge of animal resources in the countries of the region do not match the stated ambitions or the macroeconomic importance of the sector (see Box 11). An analysis of the 2005 Budget Act of the government of Burkina Faso presents spending (including external financing) on priority sectors in the fight against poverty, such as basic education (13.3%), health care (7.3%), agriculture (14.3%), and transport and infrastructure (13.5%). Although its potential to reduce poverty is recognised, the livestock sector received just 0.7% and 0.9% of the national budget in 2004 and 2005, respectively, although this is an improvement on the previous 0.2%.

In Benin where livestock comes under the Ministry of Agriculture, Livestock and Fisheries, the budget is relatively higher for these sectors, taken together (26.01%). Spending is basically allocated to goods and services that are important in the government's agricultural development policy, which will be topped up with sizeable foreign financing (20,590,000 CFA francs) this year. Farming and fisheries are included among the priority sectors of activity for 2006, with reform of the cotton segment being the largest budget item. Mali has created a Ministry of Livestock and Fisheries. Until recently, the livestock sector was included in rural development and environmental affairs. Expenditures for this group accounted for 4.75% in 2004, 5.16% in 2005, and 4.85% in 2006. The percentage that will finally be allocated to the livestock sector will become clearer when the results of intensive lobbying by the cotton industry are known.

In Côte d'Ivoire, the Ministry of Animal Production and Fisheries Resources (MPARH) has been separated from the Ministry of Agriculture. The 2005 Budget Act gives priority

Box 11. Government financing for livestock production in some SWA countries

In Nigeria, all external financing allocated to rural areas should clearly identify the share reserved for livestock production, which reflects the political will to further the sector's development and also lend visibility to the financial resources invested in a sector that is the driving force behind crop farming in most of the SWA countries (verbal communication, Federal Ministry of Agriculture, September 2006).

In Niger, cumulative financing for livestock farming has made great progress. In 2000, when the ministry was created, livestock production received just 600 million CFA francs in public funds for its development. The political importance attached to the livestock sector has boosted financing to 30 billion CFA francs over the last four years, for about 7.5 billion a year, not including investments under the government's general budget, which hover around 0.2% as in Burkina Faso.

In Burkina Faso, the cumulative amounts are lower than in Niger. A recent report by the Ministry of Animal Resources suggests that cumulative financing will not exceed 18 billion CFA francs including the Heavily Indebted Poor Countries Initiative (MRA, 2006). Not only is public sector financing low, making that financing readily available is still a bottleneck that needs to be unblocked.

to seven ministries that receive 85% of the budget after debt service. In declining order they are: education (28.2% of the total), economic affairs and finance (17.7%), defence (13.1%), health care (7.4%), higher education (7%), economic infrastructure (6.1%), and security (6%). The livestock sector was expected to receive less than 6% of the budget at a time when the MPARH was preparing a master plan for the development of the sector which had already been weakened by a lasting socio-political crisis.

The situation in Niger is not different, but it appears to be evolving favourably to the benefit of the sector whose role is now recognised as crucial in the country's rural development. Livestock has been promoted to a full-fledged ministry. The information obtained by the mission from government authorities reports a budget estimate of 20 billion CFA francs in government funding for 2007 compared to an earlier period when the budget for the livestock sector was 1-2 billion CFA francs.

The general trends in the countries of the region point to low levels of government investment, averaging less than 5% of ministerial allowances. Even adding the sums to be allocated to the livestock sector by the rural development ministries, total spending on the sector in the zone will not exceed 10% of total expenditures.

As mentioned earlier, for the private sector, the animal production system and the high vulnerability of livestock to external factors, particularly diseases, does not lend itself easily to financing. Financial institutions and banks in general refuse to run the risk, since returns on livestock farming are often marginal.

1.2 Policies to support trade

Work must be done to harmonise trade policies within the Community. UEMOA has adopted a common external tariff policy which was used as the basis for negotiations in ECOWAS. In the UEMOA member countries, a two-level trade policy was established in 2001 and has been in force since then. The policy differentiates between the union's member countries and non-members.

Non-UEMOA countries. A common external tariff is applied to products imported from non-UEMOA countries. It is composed of:

- A four-level customs duty (0%, 5%, 10%, 20%) for the four categories of products (0,1,2,3).
- A statistical charge of 1%.
- A community solidarity levy of 1%.

The general customs duty is therefore:

- 2% for products in category 0
- 7% for products in category 1
- 12% for products in category 2
- 22% for products in category 3

For UEMOA countries: There is community preference consisting of tax free entry for products originating in the member States. Foodstuffs must be classified in the first category to be considered necessities.

In the private sector, trade in animal products is limited by a glaring lack of support for livestock farmers, particularly those who have invested in more intensive production and who count on fluid trade to obtain income. Livestock traders in general suffer from a lack of working capital. Financial institutions do not pre-finance trade because of the risk—as recently demonstrated by the impact of the crisis in Côte d'Ivoire on Mali and Burkina Faso. For the same reason, credible traders are not ready to undertake commitments with banks that do not offer them a product tailored to their requirements. They generally finance their activities with their own funds and sometimes with supplier's credit at usurious rates, which can drive the cost of an animal up by 20% to 25%.

2 The challenges and opportunities of research and development (R&D) policies

The role of research in support of animal production, processing, and marketing is to make animal products available at affordable prices and ensure that only healthy products reach local, regional, and foreign markets. This should be addressed by national agricultural research services by organising the research process to respond to social demand, taking account of market requirements (supply systems, motivation/reward systems). However, apart from the difficulties and budget constraints that are widespread

in national agricultural research structures in almost every one of the SWA countries, research & development (R&D) programmes in livestock production are the least well endowed with financial, material, and human resources. Table 16 shows that the position of West Africa is relatively worse than in other parts of the continent in terms of investments by the public and private sectors in R&D. Nigeria ranks first in this area, accounting for 34% of all the funds spent on R&D in West Africa.

Total public spending on agricultural R&D as a percentage of the gross agricultural domestic product—defined as the agricultural research intensity ratio (IR)—is a common indicator of investments in research and permits a country's spending to be compared internationally. In 2000, the African continent invested 0.70 cents for every 100 dollars

Table 16. Public and private agricultural R&D investments in Sub-Saharan Africa, 2000

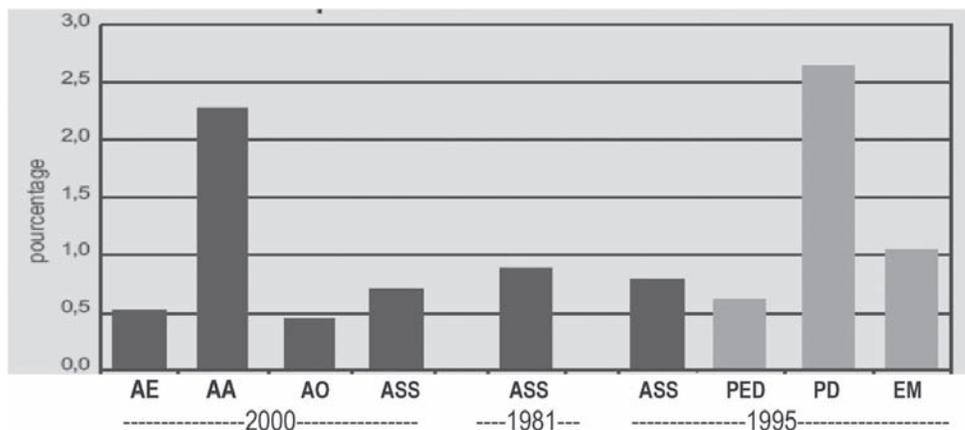
Region/country	Expenditures (millions of 1993 international dollars)			Shares (percentage)	
	Public	Private	Total	Public	Private
East Africa (7)	341.4	5.4	346.8	98.4	1.6
South Africa	365.6	15.6	381.2	95.9	4.1
Other southern Africa (5)	62.4	2.8	65.2	95.7	4.3
Nigeria	106.0	-	106.0	100.0	-
Other West Africa (13)	209.3	1.8	211.1	99.1	0.9
Total (27)	1,084.7	25.6	1,110.3	97.7	2.3

Source: Beintema and Stads, 2005 @ www.asti.cgiar.org/pubs-africa.htm, accessed on 11 November 2006.

of agricultural domestic product (in 1993 international dollars), which is lower than the 1981 figure of 0.95 cents. The intensity ratios range from 0.2% or under in the Gambia, Niger, and Sudan to over 3.00% in Botswana, Mauritius, and South Africa. In 1995, which is the most recent year for which world statistics are available, the average IR for agricultural research in Sub-Saharan Africa was slightly higher (0.79%) and was also higher than the average for the developing countries taken together (0.62%). West Africa still trails behind East Africa in average IR. Its IR is less than one fifth of the southern African countries and was lower than the continental averages in 1981, 1995, and 2000 (Figure 7).

There is no official recommendation on the preferred IR for investments in agricultural R&D. In the early 1980s, the World Bank established a target of 2% which was often quoted afterwards. However, some consider a ratio of 1% to be more realistic, but very few of the Sub-Saharan countries are even able to attain this lower objective.

Table 17 compares the IRs for agricultural R&D and other important parameters for the potential or the performance of national agricultural research services in the region. The country parameters point to trends that reflect the agropastoral resources and the agricultural endowment of the groups of countries, but the general situation can be assessed in different ways. Senegal has the highest ratio for the number of researchers per 1 million population in the Sahel countries (66.1), while Côte d'Ivoire ranks first among all the countries (103).



Notes:

AE= East Africa, AA= Southern Africa, AO= West Africa, ASS= Sub-Saharan Africa, PED= developing countries, Source: Adapted from Beintema and Stads, 2005 @www.asti.cgiar.org/pubs-africa.htm.

Figure 7. Intensity ratios for agricultural research in different periods in Africa and in the world

As for gender, Burkina Faso with 0.5% full-time equivalent female researchers has a long way to go to catch up with other countries—8% in Côte d'Ivoire, 19% in Mali, and 22% in Nigeria. Expenditures on R&D appear to reflect a long tradition of agricultural research, as in Senegal (145,374 dollars/researcher). It appears that the target of 1% or more has only been attained by Senegal (which had surpassed it by 1995) and Mali, which has recently made noteworthy efforts.

Nigeria still stands out as a separate entity in terms of the macroeconomic aggregates (more than 2 million dollars/researcher/year) but its IR (0.38%) is below that of Burkina Faso (0.50%). It should be noted that the number of full-time equivalent researchers assigned to livestock programmes is invariably lower than the number assigned to other programmes (crops, natural and other resources, forestry, fishery), with the notable exception of Mali where 32.3% of full-time equivalent researchers work in livestock compared to 39.1% in crops.

- i. In the SWA as a whole, the regional institutions have special roles to play, in particular:
- ii. Lead the process of identifying regional priorities through dialogue and consultation with the regional agencies.

Table 17. Agricultural research staff in some Sahel and West Africa countries

Parameter	Burkina Faso	Mali	Senegal	Niger	Côte d'Ivoire	Nigeria
Ratio researchers/1 million population (1992)	35	93	66.1	29.1	103	36.1
Percentage female researchers/total	0.5	19	10	7	8	22
Total spending/ researcher (dollars) (2001)	82,917	91,575	145,374	57,958	n.d.	2,639,174
Research intensity 1999 (%)	0.5	1.03	1.0	0.17	0.63	0.38
Breakdown by type of research:						
Crop	32.5	39.1	49.5	66	53.7	42.7
Livestock	8.5	32.3	20.1	16	8.1	23.2
Natural resources or other	20.9	29 (other)	30.7 (other)	14	2.8	0.7

Source: Adapted and calculated with country data: @www.asti.cgiar.org/pubs-africa.htm.

- iii. Formulate research topics with eco-regional perspectives.
- iv. Harmonise research methods to save resources and increase the chances of success and broader impact.
- v. Design capacity building approaches that produce high quality personnel in the region. Regional research based on these new models will contribute to regional integration.

At the institutional level, there are a number of regional research centres and entities, including the International Centre for Sub-humid Livestock Research and Development (CIRDES) based in Bobo-Dioulasso, Burkina Faso; the International Trypanotolerance Centre (ITC) based in Banjul, the Gambia; and the Sahel Institute (INSAH) based in Bamako, Mali, which comes under the CILSS. A number of regional livestock research programmes and projects are either directly led by the national agricultural research services which host them, or are financed through CORAF/WECARD.

R&D in livestock production in the coming years should be linked to the revitalisation of the regional and international market for animal products in West Africa. The increased demand for animal products means that advantage must be taken of progress in the fields of biology, and physical, social, and environmental sciences to overcome the new constraints on producers, processors, and consumers. **Expertise in molecular biology, genomics, biotechnology, and bioinformatics is also essential**, not just to better understand problems and discover previously untapped potential to quickly remove

obstacles to improved production, but also to effectively address emerging issues, including the safety of animal products.

There is not enough FTE in most of the NARS, and even in the regional centres, to carry out on-farm socio-economic research to analyse chains (competitiveness in regional and international trade) and macro-economic policies. This research is topical and should be provided to producer and consumer organisations. It should also feed into general and sectoral policies that can underpin the development of technologies to reinforce food security and reduce poverty.

3. International initiatives for livestock development

The Sahel and West African countries also benefit from activities to promote the livestock sector undertaken through several international initiatives, including:

- African Livestock (ALive)
- Livestock, Environment and Development Initiative (LEAD)
- Pro-Poor Livestock Policy Facility (PPLFP)
- World Initiative for a Sustainable Pastoralism

Table 18 presents the objectives, countries where active, modes of action, and coordination/management structures relating to opportunities for cooperation and possible synergies among actions to develop markets for animal products in West Africa. A brief overview of the objectives of each initiative follows.

3.1 African Livestock (ALive)

The general objective of ALive, created in 2001 on the initiative of the World Bank (operational since 2004), is to compile information on all livestock development programmes to identify their shortcomings, and promote the sector's role in making a significant contribution to poverty reduction and economic growth in Sub-Saharan Africa (SSA) through growth in trade, market development, and a sustainable institutional framework. ALive intends to address the challenges in the livestock sector in SSA in three ways:

- i. Assure the means of livelihood and working capital to boost productivity of pastoral systems in dryland zones.
- ii. Improve access to markets through competitiveness, the creation of value added, and the quality of animal products for urban markets in SSA.
- iii. Promote intensive farming for high performance and increased production in zones with constraints on land and animal feed, to better supply urban markets.

By way of example, in implementing its action plan and investment programme for the livestock sector (PAPISE), Burkina Faso could ask for methodological and financial support under the African Partnership for Livestock Development, Poverty Alleviation,

and Economic Growth (ALive), in which it participates actively as a founding member. From ALive it can expect support at the national level to encourage more attention to be paid to livestock production in poverty reduction and economic growth, and a better grasp of subregional problems so that policies and arguments in favour of the livestock sector can be harmonised.

3.2 Livestock, Environment and Development Initiative (LEAD)

LEAD's general objective is to protect and promote natural resources for the development of livestock farming while working to reduce poverty. The specific objective is to introduce decision-making tools to maximise the positive impacts and minimise the negative impacts of livestock-environmental interaction. LEAD works in hotspots in Africa, which are dryland and semi-arid grazing areas, and in zones where there is conflict between livestock farming and wildlife.

3.3 Pro-Poor Livestock Policy Facility (PPLPF)

The general objective of this initiative is to contribute to poverty reduction through the development of healthy livestock production, specifically by building capacity to formulate effective livestock policies for poverty alleviation. The PPLPF initiative works in East and West Africa, South Asia, South-East Asia, and the Andes. Its mandate includes institutional development and the development of negotiating platforms.

3.4 World Initiative for a Sustainable Pastoralism (WISP)

WISP promotes the empowerment of pastoralists to enable them to sustainably manage drylands resources. This permits them to demonstrate that their land-use and production systems are an effective and judicious way of using national resources in the world's drylands. WISP works to empower pastoralists and their institutions by enabling them to gather knowledge and influence policies that affect the integrity of their means of survival and that hamper their capacity to manage their lands and resources sustainably. WISP offers socio-economic and environmental rationale to pastoralists to improve the perception of pastoralism as a viable and sustainable system for managing resources. The initiative also advocates the creation of an environment that is favourable to sustainable management of natural grazing land, higher incomes for pastoralists, and their empowerment.

With the notable exception of the ALive Programme, whose mandate is limited to Sub-Saharan Africa, the other initiatives target ecologies around the world that are fragile for sustainable livestock farming, specifically for the benefit of the poor. The linkage of a number of projects and R&D activities that would revive and promote the development of animal rearing in West Africa is an action that should be encouraged among

Table 18. Table of international livestock development initiatives

Initiative	ALIVE	LEAD	PPLPF	WISP
General objective	A larger contribution by the livestock sector to poverty alleviation and economic growth in Africa.	Higher income from livestock production in a protected and improved environment.	Poverty reduction among groups of livestock farmers	Sustainable management of drylands resources.
Specific objectives	Development of a platform of multiple actors for the coordination and implementation of livestock initiatives.	Support for decision-making on beneficial interactions between livestock farming and the environment.	To build capacity to formulate livestock policies to favour the poor by better managing health and environmental risks.	To empower pastoralists and pastoralist institutions by enabling them to gather knowledge and influence policies.
Geographic mandate	Africa	Global, with stress on hotspots.	East Africa West Africa South Asia South-East Asia Andes	Drylands around the world, with a pilot zone in West Africa.
Focal theme	A common regional vision; building capacity and management of knowledge at the subregional level. Support for national studies and operational assistance.	The physical and social effects of animal production on the environment. In Africa : Interaction between livestock and wildlife; leading-edge measures to control drought; and natural resource management in dryland grazing areas.	Role of livestock production in economic development and poverty alleviation. Development of markets and market access. Livestock services, policies, and actors. Management of information and the dynamics of change.	Creation of an environment that favours sustainable management of natural grazing land, higher incomes for pastoralists, and their empowerment.

Initiative	ALIVE	LEAD	PPLPF	WISP
Target groups	African institutions, donor governments, research institutions, producers' organisations, NGOs, and the private sector. End beneficiaries: poor producers and consumers.	Policy makers in donor agencies and developing countries.	FAO, national policy makers, international regulatory and policy agencies.	Pastoralists, policy makers, donor agencies, International regulatory agencies.
Activities	Regional: Preparation of a common policy strategy and vision. Subregional: Building capacity for better management of knowledge. National: Analytical support and operational assistance.	Research on the interaction between livestock and the environment. Development of tools for policy decisions.	To sensitise the public to the contribution of livestock production to poverty reduction. To generate a portfolio of livestock-related interventions for the reduction of poverty through institutional change and policies. To develop effective systems for information, interchange, and analysis, and decision-support and monitoring, and evaluation tools. To establish effective mechanisms for representation of poor livestock farmers in the negotiation of institutional change and policies.	Pilot phase: Training for pastoralists (cooperative management, sustainable management of resources, submissions, etc.). Support for the emergence of pastoralist organisations (unions, federations, etc.).

Initiative	ALIVE	LEAD	PPLPF	WISP
Operating structures	General Assembly for all actors	Virtual LEAD Centre	Steering Committee	
	Executive Committee Secretariat and Programme Coordinator	Partner research institutions in different regions	FAO for coordination of the regional hubs in the target geographic zones to facilitate policy dialogue with the countries concerned.	
Program implementation	All partners (coordination and cost-effectiveness)	FAO on behalf of multilateral donors, Denmark, Switzerland, France, IFAD, USAID, UK, World Bank, ILRI, CIRAD.	IIMA, NDDB, EIMVS, GEMOA, IGAD, CONDESAN National and local governments	IUCN UNDP/GEF CILSS

lending and/or aid agencies. Therefore the various international initiatives should work cooperatively to pool financial and other material and human resources to facilitate and speed up the search for solutions to the development problems of the livestock sector in the SWA countries. This includes protection of working capital for the majority of small herders who still engage in extensive farming, higher productivity, and better access to markets. This approach would benefit the restructuring efforts by the Consultative Group on International Agricultural Research (CGAIR) in the World Bank.

4. Livestock production and strategies to combat poverty and raise the standard of living (employment income, food security)

The livestock sector has enormous potential for combating poverty and raising the standard of living of rural and urban populations (also see Chapter 1, paragraph 3).

Despite its potential, the sector has long been marginalised in economic development programmes, even in countries where it accounts for a significant part of GDP and export revenues, as in the Sahel countries. Serious studies on the role of animal rearing in generating income of small farmers conclude unequivocally that it is an important source of revenue that makes a contribution, however modest, to raising the standard of living of rural populations (see Box 12). As noted in Chapter 2, the livestock sector

distributes revenue to a host of economic agents, contributes to the diet and improves nutrition, while serving as a driving force for crop farming through its contribution to animal-drawn cultivation and the use of organic manure.

For small livestock farmers, rearing animals is often their only possibility of building up resources and diversifying risks, which can prevent poor farmers in marginal zones from sinking into indigence.

Box 12. Livestock rearing and income in rural Burkina Faso

A review by Somda (2005) highlights the roles of livestock rearing in the fight against poverty in Burkina Faso. At the macroeconomic level, the value added of livestock is an estimated 14.9% of national value added. At the microeconomic level, livestock ranks fifth as a source of revenue, after non-agricultural activities and before cash crops, which rank sixth. In the sector, 49% of households raise poultry. Goats are raised in 44%, sheep in 28%, and cattle in 25% of households. Animal production contributes to risk management, through sales that offset between 15% and 30% of fluctuations in income. Other studies conducted in Burkina Faso and in the subregion (Somda et al., 2004; Somda et al., 2005) suggest that about 30% of family milk production was for self-consumption, 65% was sold, and 5% was lost or distributed to members of society. Income from milk sales covers the variable costs of livestock rearing, with some left over for the consumer requirements of farmers and their families. Dairy production in extensive livestock farming is an economically and socially profitable activity.

However, livestock farming has been neglected in poverty-reduction strategy documents (PRSPs) until recently. The PRSD model, although first conceived in the context of the Heavily Indebted Poor Countries Initiative (HIPC Initiative), is today a centrepiece in policy discussions in all the countries that receive loans from the World Bank and the IMF under concessional conditions. The PRSDs were recommended to bolster the interaction between donors and beneficiary countries with the aim of improving the effectiveness of programmes to combat poverty.

Many poor countries, including those in SWA, rely heavily on livestock rearing although this is hardly mentioned in the PRSDs. Niger, for example, only mentions the sector in passing. Some countries, such as Guinea Bissau and Sierra Leone, ignore it completely. Only a few countries, such as Mauritania, come closer to the objective by underlining the importance of livestock farming in their PRSPs.

Even if they are not explicitly mentioned in the PRSPs, action plans to promote livestock farming exist or are in preparation in the SWA countries, and indicate that the public authorities have realised the importance of the sector in the fight against poverty. These actions reflect the momentum toward regional harmonisation of interventions to promote livestock farming. The PRSPs set out actions to promote animal production through the use of chains (animal-meat, dairy, poultry, rabbits, hogs, sheep and goats, greater cane rats, and snails). The main systems identified as having a significant impact

on poverty reduction are those that provide work for a large part of the rural population and/or have the potential to create related jobs and downstream linkage with crop production.

Small Ruminants: For poor families that want to raise animals, goats are the best adapted to the context because of their hardiness, high production, and prolificacy. Needy families living in pockets of poverty in the countries of the region should be targeted.

Poultry: Estimates of the poultry population are relatively unreliable, given the poor statistics currently available. Large-scale poultry farming in pastoral environments is in its infancy. But it is relatively more developed in the agropastoral environment. Families or women's cooperatives should preferably be introduced to local poultry farming.

By-products (hides, skins): They have enormous potential that has scarcely been tapped to raise the income of farmers and other processors of these products (a large part of this potential is used in the food industry by the coastal countries). These by-products are underdeveloped (exports of hides and skins are limited to Europe). This potential alone can provide a livelihood for a significant number of people and raise the income of livestock farmers, butchers, and other workers in traditional cottage industries. It could make a large contribution to earning the foreign currency necessary for development.

Development of animal-drawn cultivation and use of organic manure: Animal-drawn cultivation can contribute to reducing poverty in zones with rain-fed crops or dike farming, due to the enormous potential of animals for traction (mules, horses, oxen, etc.). Promotion of animal-drawn cultivation would significantly increase the arable area and therefore boost farm production (food self-sufficiency) and free up time for farmers to spend on other activities. Official documents indicate that livestock farming is now recognised as a sector capable of quickly reducing poverty, given that the promotion of cash crops has reached its limits (lower productivity and world prices).

However, in this dynamic of redefining priorities for governments, little attention has been paid to complementarity, as promoted by the regional organisations (UEMOA, ECOWAS, and CEMAC). Documents that refer to development policies in the livestock sector make no mention of the need for targeted and complementary interventions based on natural comparative advantages or the results obtained so far by national governments. Is this a sign of a hidden desire for national sovereignty with regard to self-sufficiency in animal products? Or is it because poverty in the different regions is so great that a wide variety of means is required to eradicate it? In practice, it appears to be impossible for each country individually to assure that its population can be self-sufficient in animal products.

CHAPTER SIX

STRATEGIC VISION OF THE LIVESTOCK SECTOR IN THE SAHEL AND WEST AFRICA: FOOD SECURITY, POVERTY REDUCTION, AND CONSTRUCTION OF A REGIONAL MARKET FOR ANIMAL PRODUCTS

The purpose of this study is to contribute to the Community's agricultural policy objectives (ECOWAP) in the area of food security and poverty reduction. The mission's work relates to one of the main ECOWAP fields which requires a regional approach given the principle of subsidiarity—the development of the livestock-meat and dairy products systems, the promotion of processing, stocking, and preservation, harmonisation and alignment of the sanitary and phytosanitary standards, and support for the organisation of actors and the promotion of regional dialogue. The mission is comforted by the existing political will in the regional integration institutions (ECOWAS and UEMOA) and in the SWA countries to recognise the role of livestock in reinforcing the macroeconomy and its contribution to poverty alleviation, particularly through the establishment of ministries of livestock, and acknowledgement of the importance of the sector in the PRSPs. The strategic orientations proposed here summarise the conclusions that the mission reached through its consultations in the field in the SWA countries, documentary research, and interaction with all the resource persons encountered and the SWAC Secretariat partners.

1. Strategic short- and medium-term orientations/recommendations

1.1 Respond to rising West African demand

- *Make inexpensive good-quality meat available for a growing population.* For the two strategic products (meat and milk), total demand will need to be met for beef, mutton, goat, poultry, and pork in the order of 3.54 million tonnes a year and of 4.5 million tonnes for dairy products by 2015. Given today's population growth rate, particularly in cities, and the increasing purchasing power of consumers in the SWA countries, current demand could rise by about 0.55 million tonnes if growth in animal production does not exceed the current figure of 2.58%. As for dairy products, where it can reasonably be admitted that there are few chances of greater protection for domestic production in the large importing countries, demand by 2015 will most likely reach 4.5 million tonnes for the SWA region, opening up a regional deficit of about 2.5 million tonnes. The strategy to be adopted focuses on the following priority options.
- *Intensify agropastoral systems* to improve their technical and economic performance. This can only be done by improving the quality factors that limit production, such as animal feed. Public authorities will play an important role in this process of intensification. They will be required to make inputs accessible through policies to reduce taxes on zoo-technical and veterinary inputs, and livestock equipment. Efforts in this direction are already under way in UEMOA (Niang and Vindrinet, 2005). Also, easier access to credit should make for effective support for tax reduction. The use of better-performing dairy breeds should be combined with outreach and training programmes for families and private operators.
- *Diversify animal production* to make the most of comparative natural advantages of the Sahel (meat and milk) and coastal (short-cycle feedlot operations) countries. The coastal countries can develop socially-acceptable models and strategies for access to pastoral resources available in Sudan's northern savannas to be used as finishing areas for Sahel ruminants. The agroecological diversity and the zoo-genetic potential of the region underpin the possibilities of specialisation and the potential of the zone for animal production.
- *Encourage the development of intra-regional trade increasingly based on finished or processed products.* The development of a mixed system can be envisaged in which trade in live animals is combined with modernisation for meat exports by vertically integrating high rates of animal rearing in rural areas, collection and stocking for finishing, and slaughter- and meat-distribution chains in a segmented regional market.

- *Improve systems for processing animal products* starting by renovating the existing infrastructure to modernize it and expand processing capacity. In most of the SWA countries, the abattoirs are obsolete and/or have limited capacity and do not permit enough animals to be slaughtered even to meet domestic demand. It is impossible to envisage large meat product exports in the region under current conditions. Existing potential and experience show that exports of meat products are feasible and can be profitable. From the standpoint of regional trade, processing centres can be established in countries with a comparative industrial advantage. Countries such as Côte d'Ivoire, Ghana, and Nigeria, could act as centres for processing Sahelian ruminants.
- *Improve internal distribution systems and intra-regional trade.* The study recommends that trade policies in the SWA countries be focused on better organisation of animal product markets in order to boost trade flows to match the sales aspirations of Sahelian producers and make more goods available for export to the coastal countries. The strategy would also include boosting the competitiveness of products through lower transaction costs and greater tax effectiveness. The traditional chains still play an important role in product distribution systems. Adequate means of transport should be promoted. Routes need to be improved and the number of barriers reduced since they hamper the flow of intra-regional trade for traditional chains.

1.2 Increase the livestock sector's contribution to poverty reduction

- *Rural poverty in the region is reduced by 34% in the next 20 years through stepped-up promotion of the development of animal production*

Building on the performance of each country in poverty reduction, the mission recommends the establishment of a poverty line based on the lowest rate in the region. Working on the premise that if one country can achieve good performance in today's regional context, the other countries ought to be able to draw on the experience of the best country in reducing rural poverty. Therefore the poverty rate in Ghana has been taken as the regional target and the vision is formulated as follows:

The vision calls particularly on the Sahel countries (Burkina Faso, the Gambia, Guinea Bissau, Mali, Mauritania, Niger, and Senegal, etc.) which, despite their comparative natural advantage in livestock farming, have rural poverty rates of over 50%. In these countries, the promotion of actions to develop and profitably exploit the livestock sector should be aimed at poverty reduction.

This vision also extends to some coastal countries given their current levels of rural poverty. They include Côte d'Ivoire, Guinea, Liberia, Nigeria, and Sierra Leone. For these countries, actions to promote short-cycle livestock rearing could allow

them to capitalise on their comparative advantages in locally-produced agro-industrial by-products. Ghana, viewed as the target by the other countries, needs to continue its actions to reduce rural poverty so that it will not fall behind again, as has often been the case in most of the countries of the region. The challenge for Ghana is to follow through on its role as leader in rural poverty reduction

- *In food security, consumption of animal products in the region is at least 10 g of animal protein equivalent/adult/day by 2020.*

Consumption of animal products in West Africa is the lowest in the world, particularly in rural areas. Nutritionists recommend 20 g of animal protein per person per day, while consumption in the region only ranges from 5.9 g on average in Nigeria's trade region, to 8.5 g in the Senegal basin, and to 7 g in the Côte d'Ivoire basin¹. The strategy to increase the value and dynamism of intra-regional trade assumes a rise in the consumption of good quality meat for the population's nutritional balance.

Turning this vision into a reality requires the following actions:

- i. Development of short-cycle feedlot operations so that meat products can be obtained more quickly and a larger number of urban and rural consumers can be served.
 - ii. Promotion of unconventional livestock to diversify animal products and increase the overall supply.
 - iii. Upgrade local dairy production so that imports can be cut by at least one half, through the development of infrastructure for collection, cottage-type processing, and conservation of products.
 - iv. Development of the production of goats' milk, a product that is still not exploited in countries with large herds.
- To profitably exploit niches ("bicycle" or farmer's chicken, grass veal or lamb, greater cane rats) where the SWA region is well endowed. This strategy should go hand-in-hand with the introduction of procedures to ensure the traceability of products.

1.3 Fluid trade integrated into the financial system to increase the supply of animal products in areas with strong demand and improve the technical and economic performance of actors

- The mission recommends the following:
 - i. Facilitate customs formalities for livestock, particularly by installing one-stop windows for the payment of duties and taxes.

¹ Tacher and Letenneur, «Quelles productions animales en Afrique sub-saharienne dans une génération?», CIRAD-EMVT, 2000.

- ii. Remove all barriers to free movement in the form of rogue taxes that cause intra-regional trade to fester. Taking countries that do not guarantee the free movement of primary products in their territory to court should be a possibility.
 - iii. Harmonise for all the countries (UEMOA and ECOWAS) measures linked to internal taxes (VAT) levied by governments as part of their national sovereignty, but whose differences in application are criticised by operators as abusive.
 - iv. Work to harmonise health policies through the regional integration bodies (UEMOA, ECOWAS, CILSS etc.) on several levels and in various fields such as: (a) regulation of cross-border transhumance; (b) reinforcement of national veterinary services; (c) networking of national veterinary services for the quality control of veterinary medicines and the restructuring of the regional market for those medicines.
- *Stronger policies for the protection of local production* for products or countries in the zone that demonstrate growth potential. The experience of some countries in this regard shows that reinforcement of community protection mechanisms with national mechanisms can spur local production. This is true in Côte d'Ivoire which imposes countervailing duties on poultry products. As a result, local production performs quite well in intra-regional and extra-regional exports (were it not for the crisis). The duties are paid by importers. It is no longer a matter of recycling financial resources obtained from livestock into livestock, but of an effective financial contribution to the livestock sector if the duties are used properly.

1.4 Support the organisations of agropastoralists, livestock exporters, and processors

- The rise of more dynamic trade organisations of (agro) pastoralists at the national and regional levels can orient the countries' pastoral development policies and lead to better-adapted and more flexible regulations. The gain in internal momentum for the organisation and association of pastoralists in certain SWA countries (AREN in Niger, RECOPA in Burkina Faso, UDOPER in Benin, etc.) is worth noting. These initiatives for networking and managing cross-border transhumance by pastoralist organisations should be supported by the regional institutions.
- The mission also notes the importance of moving toward a different model for organising operators and actors in the different lines of animal production (livestock-meat, poultry, hides and skins) into associations. The associations should meet in each country to appoint a kind of national council of livestock sector operators. If these national councils operate normally because they are representative of the set of actors, large and small, it is not a necessity to establish a regional body as a pressure group. It is far more important to establish a regional

observatory with agencies in the various countries whose leadership would be exercised directly by the national federations.

1.5 Protect pastoralism

- Steps for the protection of pastoralism and for sustainable management of pastoral resources from now to 2020 should be taken in the Sahel countries and in the receiving countries. In the case of the Sahel, the mission recommends that governments respect the interests of extensive livestock farming in all land management plans. Steps should be taken to reduce the range of transhumance movements (limit the size of the animal population and delay departures) by developing large grazing areas and taking livestock requirements into account in the management of Sahelian rivers, lakes, and seas. In cross-border receiving areas, pastoral facilities should be provided (grazing areas, water supply points, tracks and corridors for transhumance, livestock infrastructure, etc.) for the benefit of sedentary and nomadic agropastoralists.
- The mission recommends that an observatory of cross-border transhumance be established with the objective of producing information for decision makers through: an in-depth analytical study of cross-border transhumance; monitoring and evaluation of the application of ECOWAS regulations in the member States, bilateral agreements, etc. and implementation of regional policies with a view to formulating recommendations; performance of a follow-up study to identify directions for cross-border transhumance. The observatory would be based on a multidisciplinary research mechanism led by AGRHYMET or INSAH, with a participative approach.
- Prevent and manage the negative impact of climate crises (protect capital). If managed poorly, climate contingencies (droughts and floods), attacks on forage resources by predators, and conflicts, can lead to decapitalisation in the rural world (mortality, overexploitation of herds with the sale of breeders, etc.).
- The regional strategy for the prevention and management of food crises established by the CILSS' AGRHYMET Regional Centre needs to be strengthened for the Sahel countries. It is based on information and early-warning systems, mechanisms to coordinate crisis response, and crisis management instruments. A number of urgent actions are required: (a) establishment of a regional structure to take charge of crisis management; (b) protection of livestock capital through the creation of livestock centres to re-establish the herd after a crisis; (c) establishment of reserves (fodder, by-products) that can be mobilised immediately to address animal feed crises; and (d) close involvement by livestock farmers' organisations in the mechanisms for crisis prevention and management.

2. Long-term strategic orientations

2.1. Provide the means necessary to conquer the international market for animal products

- For the UEMOA and ECOWAS member countries, it is necessary to: (1) provide reinforced veterinary control services; (2) provide sufficient financing for veterinary control structures to make them sustainable; and (3) strengthen the central roles of UEMOA and ECOWAS in the coordination of policies for disease prevention and animal health surveillance.
- Harmonisation and conformity of sanitary and phytosanitary norms and standards for the use of products and inputs forms part of the regulation of regional and international trade, given that it defines the conditions for fair competition among producers while protecting consumers from abusive and dangerous practices.

2.2 Step up the contribution of science and technology to enable livestock production to respond to future challenges

Agricultural research able to respond to the demand for good-quality and safe meat products for balanced nutrition by a growing population that is becoming more demanding

- In 2000, the African continent invested 0.70 cents for every 100 dollars of agricultural domestic product. The mission recommends that a ratio of at least 2% (suggested by the World Bank) be attained by all the SWA countries. Full-time jobs in livestock programmes should be upgraded.
- R&D in livestock in the coming years should focus on revitalizing the regional and international market for animal products in West Africa. The size of increasing demand for animal products makes it necessary to harness progress in the fields of biology, and physical, social, and environmental sciences to overcome the new constraints on producers, processors, and consumers. Expertise in molecular biology, genomics, biotechnology, and bioinformatics is also indispensable, not just to better understand problems and discover previously untapped potential to quickly remove obstacles to improved production, but also to effectively address emerging issues, including the safety of animal products.



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ABBREVIATIONS AND ACRONYMS

ABN	Autorité du bassin du Niger (Niger Basin Authority)
ABP	Agricultural by-product
ACDIC	Association citoyenne de défense des intérêts collectifs
ADB	African Development Bank
AFD	Agence française de développement (French Development Agency)
AGRHYMET	Centre régional agro-hydro-météorologie
AIBP	agro-industrial by-product
ALG	Autorité du Liptako-Gourma (Liptako-Gourma Authority)
ALive	African Livestock

ANPROBVIS	Association nationale des professionnels de la viande du Sénégal (Senegalese National Association of Livestock and Meat Operators)
APESS	Association pour la promotion de l'élevage au Sahel et en Savane (Association for the Promotion of Livestock in the Sahel and Savannah)
AREN	Association pour la re-dynamisation de l'élevage au Niger (Association to Revive Herding in Niger)
ASF	African swine fever
AU-IBAR	African Union–Inter-African Bureau for Animal Resources
BSE	Bovine spongiform encephalopathy
CAPES	Centre d'analyse des politiques économiques et sociales
CARDER	Centre d'action régionale pour le développement rural (Regional Action Centre for Rural Development)
CBPP	Contagious Bovine Pleuropneumonia
CCFD	Catholic Committee against Hunger and for Development
CEBV	Communauté économique du bétail et de la viande (Economic Community for Meat and Livestock)
CEMAC	Communauté économique et monétaire de l' Afrique Centrale. (Economic and Monetary Community of Central Africa)
CET	Common External Tariff (UEMOA)
CFAF	CFA franc
CFNBV	Confederation of National Cattle and Meat Federations
CIDT	Compagnie ivoirienne de développement du Textile (Ivorian Textile Development Company)
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CIRDES	Centre international de recherche-développement sur l'élevage en zone subhumide
CIRES	Centre ivoirien de recherches économiques et sociales (Ivorian Centre for Economic and Social Research)
CMDT	Compagnie malienne de développement des textiles (Malian Textile Development Company)
CNC	Cadre national de concertation
CNCR	Conseil national de concertation et de coopération des ruraux (National dialogue and cooperation Rural People Council)
COBASS	Coopérative de commercialisation du bétail pour l'approvisionnement de l'abattoir de Sikasso

CORAF	Conseil ouest et centre africain pour la recherche et le développement
CRUS	Comité régional des unions de producteurs du Sahel (Regional Committee of Sahel Producers' Unions)
DINFEL	Directoire des femmes en élevage (Board of Women in Livestock)
DIREL	Direction de l'élevage (Livestock department)
DPRA	Direction provinciale des ressources animales (Provincial Direction of Animal Resources)
EBID	ECOWAS Bank for Investment and Development
ECOWAP	Economic Community of West African States Agricultural Policy
ECOWAS	Economic Community of West African States
EMCCA	Economic and Monetary Community of Central Africa
EMVT	École de médecine vétérinaire de Toulouse (Toulouse School of Veterinary Medicine)
FAO	Food and Agriculture Organization of the United Nations
FEBEVIM	Fédération des groupements interprofessionnels de la filière bétail viande au Mali (Federation of Interprofessional Livestock and Meat Groups of Mali)
FAOSTAT	FAO Statistical Database
FERAP	Projet de fluidification des échanges et rapprochement des politiques agro-alimentaires
FMD	foot-and-mouth disease
FU	fodder unit
g	gram
GAA	German Agro Action
GDP	gross domestic product
GNP	gross national product
H5N1	Influenza A virus subtype
IEMVT	Institut d'élevage et de médecine vétérinaire des pays tropicaux
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
INERA	Institut de l'environnement et de recherches agricoles (Environmental and Agricultural Research Institute)
INSAH	Institut du sahel (Sahel Institute)
IR	intensity ratio
IRIN	Integrated Regional Information Networks

ITC	International Transhumance Certificate (ECOWAS)
ITC	International Trypanotolerance Centre
l	litre
LEAD	Livestock, Environment and Development Initiative
MISTOWA	Network of Regional Market Information Systems and Traders' Organizations of West Africa
mm	millimeter
MPARH	Ministère de la Production animale et des Ressources halieutiques (Ministry of Animal Production and Fisheries Resources)
MPE	Ministère de la Pêche et de l'Élevage
MRA	Ministère des Ressources animales
NEPAD	New Partnership for Africa's Development
NGO	Nongovernmental organization
NOVIB	Nederlandse organisatie voor international ontwikkelingsamenwerking
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
OMBVI	Office malien du bétail et de la viande
ONERA	Office national d'exploitation des ressources animales
PACE	Pan-African Programme for the Control of Epizootics
PDAP	Projet de développement de l'agriculture Périurbaine (Peri-urban Agricultural Development Project, Mali)
PAPISE	Plan d'action et programme d'investissement du secteur élevage (Action Plan and Investment Programme for the Livestock Farming Sector, Burkina Faso)
PATTEC	Pan African Tsetse and Trypanosomiasis Eradication Campaign
PAU	Common Agricultural Policy of the Union (UEMOA)
PDDAA	Detailed Programme for the Development of African Agriculture (NEPAD)
PNPDL	Programme national pilote de développement laitier (National Pilot Dairy Development Programme, Burkina Faso)
PPLPF	Pro-Poor Livestock Policy Facility
PROCORDEL	Programme concerté de recherche-développement sur l'élevage en Afrique de l'Ouest (Concerted Action Programme on Livestock Research Development in West Africa)
RECOPA	Réseau de communication sur le pastoralisme (Pastoralism Communication Network, Burkina Faso)

R&D	Research and Development
ROESAO	Réseau des opérateurs économiques du secteur agroalimentaire
ROPPA	Réseau des organisations paysannes et de producteurs de l'Afrique de l'Ouest (Network of Farmers' and Agricultural Producers' Organisations of West Africa)
RVF	Rift Valley Fever
SAILD	Services d'appui aux initiatives locales de développement
SOBEVI	Société du bétail et de la viande
SODECOTON	Société de développement du coton du Cameroun (Cotton Development Corporation, Cameroon)
SODEPRA	Société de développement des productions animales (Animal Production Development Company, Côte d'Ivoire)
SOFITEX	Société des fibres et textiles du Burkina (Burkina Textile and Fibre Company)
SONERAN	Société nationale d'exploitation des ressources animales du Niger (Niger Company for the Exploitation of Animal Resources)
SPS	sanitary and phytosanitary standards
SWA	Sahel and West Africa (region)
SWAC	Sahel and West Africa Club
t	tonne
TBT	technical barriers to trade
TLU	tropical livestock unit
UDEAC	Union douanière et économique de l'Afrique Centrale
UDOPER	Union départementale des organisations professionnelles des éleveurs de ruminants (Departmental Union of Professional Ruminant Rearers' Organisations, Benin)
UEMOA	West African Economic and Monetary Union
UICN	International Union for Conservation of Nature
UNABOC	Union nationale des bouchers et charcutiers (National Union of Beef and Pork Butchers)
UNACEB	Union nationale des commerçants et exportateurs de bétail
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USD	United States Dollar
VSF	Vétérinaires Sans Frontières
WAPO	W, Arly, Pendjari and Oti-Mandouri protected areas
WAPOK	«W»-Arli-Pendjari-Oti-Mandouri-Keran

WAPPP	West African Pilot Pastoral Programme (World Bank)
WECARD	West and Central African Council for Agricultural Research and Development
WISP	World Initiative for a Sustainable Pastoralism
WTO	World Trade Organization

Livestock rearing in West Africa plays a key role in the economies of West African countries providing between 8 and 15% of overall GDP, 44% of agricultural GDP and nearly 50% if the work force and organic fertilizer are also included. Livestock rearing accounts for 34% of rural household revenues and for the most part is a key factor in food and nutritional security and livelihoods of the poor rural populations.

With 60 million heads of cattle, 160 small ruminants and 400 million poultry, the Sahel and West Africa have enormous livestock rearing potential. However, this potential is currently under-exploited and the region continues to be too dependant on extra-African imports in order to satisfy demand of certain animal products such as milk and meat. This situation is paradoxical with Sahel countries having great potential with regard ruminants as well as that of coastal countries for pork and poultry production. *Why are such comparative advantages and complementarities between zones not sufficiently optimised in order to satisfy the increasing demand for animal products in the region?*

Political and economic solutions must also be sought in addition to technical responses to improve productivity and meet the required health and quality standards. Livestock rearing can better contribute to food security and poverty reduction through the stimulation and modernisation of the marketing system, the strengthening of the agro-food processing industry, and supporting the professional training of actors and the promotion of agricultural and trade policies encouraging domestic production.

This book is a result of a joint ECOWAS – SWAC/OECD initiative, in partnership with the CILSS, ROPPA and UEMOA. It analyses the potential of livestock rearing for the region with a view towards fostering decision-making so as to strengthen the regional economy and West African populations' livelihoods.



Transhumant herd moving from Niger to Benin, on the edge of the W Park in Burkina Faso, May 2001. (Source: Toutain et al., 2001)