TRANSFORMATIONS IN WEST AFRICAN AGRICULTURE AND THE ROLE OF FAMILY FARMS

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This work has been undertaken under the direction of Karim Hussein (Principal Administrator, Secretariat of the Sahel and West Africa Club – SWAC) as part of a series of analytical papers and prospective studies on the Transformation of West African Agriculture

PREFACE / PRÉFACE

In West Africa, agriculture and natural resources continue to provide the majority of the population's income, employment and consumption needs. These sectors generate some 30% of GDP and are still regarded as having strongest potential to be a motor for West African economic development: in principle, they can provide the best opportunities for adding value, generating growth, providing employment and reducing poverty in the medium term. However, distinctive characteristics in West African agriculture need to be taken into account in assessing how it can respond to these challenges. These include the dominance of small family-run farms with diversified livelihoods, the social organisation of production, and access to labour and technological innovation. External constraints and opportunities linked to environmental and climatic variability, legislative and institutional frameworks, access to and integration with regional and international markets also need to be addressed.

Profound processes of structural transformation in West African agriculture have accompanied varying degrees of integration with regional and international markets over the last 10 years. They have affected commodity sub-sectors, geographical areas and various types of farm in different ways. While West African agriculture has successfully adapted to increase production in response to rapid population growth in recent decades[1], it is now clear that the competitiveness of West African agriculture will have to improve for it to fulfil expectations in the face of international trade liberalisation. However, identifying the levers for improving competitiveness depends on a better understanding of the changes occurring in different sub-sectors, geographical areas and types of farm.

[1] See the Club du Sahel's *West Africa Long Term Perspective Study; Preparing for the Future. A vision of West Africa in the Year 2020.* OECD, Paris (1998).

En Afrique de l'Ouest, les secteurs de l'agriculture et des ressources naturelles assurent toujours la majeure partie des sources de revenus de la population, des emplois et des besoins de consommation. Ces secteurs génèrent quelque 30 % du PIB et restent considérés comme le moteur le plus puissant du développement économique en Afrique de l'Ouest : ils offrent en principe les meilleures possibilités de valorisation, de croissance, d'emploi et de réduction de la pauvreté à moyen terme. Les spécificités de l'agriculture ouest-africaine doivent cependant être prises en compte pour réfléchir à la manière dont elle peut répondre à ces défis. Il s'agit notamment de la domination des petites exploitations familiales aux sources de revenus diversifiées, de l'organisation sociale de la production, ainsi que de l'accès à la main-d'œuvre et à l'innovation technologique. Les contraintes extérieures et les opportunités liées à la variabilité de l'environnement et du climat, les cadres législatifs et institutionnels, tout comme l'accès et l'intégration aux marchés régionaux et internationaux, doivent être également pris en considération.

Ces dix dernières années, de profondes transformations sociales de l'agriculture ouest-africaine ont accompagné les divers degrés d'intégration aux marchés régionaux et internationaux. Elles ont eu un impact différent selon les filières, les régions et les types d'exploitation. Alors que l'agriculture en Afrique de l'Ouest a réussi à s'adapter pour accroître la production afin de faire face à une population en forte croissance dans les dernières décennies[2], il apparaît maintenant clairement que l'agriculture ouest-africaine devra améliorer sa compétitivité pour pouvoir répondre aux attentes dans le contexte de la libéralisation des échanges internationaux. L'identification des moyens d'améliorer la compétitivité repose sur une meilleure compréhension des transformations en cours selon les différents sous-secteurs, régions et types d'exploitation..

[2] Voir le rapport du Club du Sahel sur l'étude des perspectives à long terme en Afrique de l'Ouest ; « Pour préparer l'avenir de l'Afrique de l'Ouest. Une vision à l'horizon 2020 ». OCDE, Paris 1998.

Evidence on the nature of change processes occurring in agriculture at local and national levels does exist, for example in the form of country assessments, case studies and commodity sub-sector reviews. What has been lacking is:

- An up to date, strategic and *regional* analysis of key trends on the ground drawing on available evidence on agricultural change across the region.
- An assessment of the stakes faced by different actors and types of farm in the context of change, with special attention to the role of family farms.
- Identification of the main "winners" and "losers" in this process, and
- A review of the best opportunities to increase value-added and improve competitiveness in West African agriculture given constraints and opportunities in the regional and international context.

It is also critical that the differing visions of regional actors on priorities for agricultural development are better understood in order to identify the key entry points for action. Mechanisms are therefore required to enhance the roles of diverse field level actors in analysis and their voice in decision-making.

Drawing on these observations, the SWAC Secretariat identified six areas in which the debate on West African agriculture needs to be strengthened as a precursor to the development of sound initiatives:

- The nature of diversity in West African agriculture and an operational typology of farms.
- Evidence on the nature of the adaptation of West African agriculture in response to profound transformation processes, the spatial dimensions and sub-regional specificities of changes underway, and the changes according to diverse types of farm.
- Impacts of OECD agricultural and trade policies on prospects for West African producers.

La nature des transformations actuelles de l'agriculture aux niveaux local et national a été largement documentée, notamment par des évaluations des situations nationales, des études de cas et des analyses des sous-secteurs marchands. Certaines lacunes restent cependant encore à combler :

- Une analyse *régionale* et stratégique à jour des principales tendances sur le terrain, élaborée à partir des données disponibles sur les transformations agricoles de la région.
- Une évaluation des enjeux pour les différents acteurs et types d'exploitations dans le contexte des mutations en cours, insistant particulièrement sur le rôle des exploitations familiales.
- L'identification des principaux « gagnants » et « perdants » dans ce processus, et
- Une étude des meilleures possibilités de renforcer la valorisation et d'améliorer la compétitivité de l'agriculture ouest-africaine, compte tenu des contraintes et opportunités existant au niveau régional et international.

Il est également essentiel de mieux comprendre les visions divergentes des acteurs régionaux sur les priorités du développement agricole, pour pouvoir identifier les principaux points d'ancrage ou leviers d'action. La création de dispositifs permettant de renforcer le rôle des acteurs de terrain dans l'analyse et leur influence dans le processus décisionnel, est donc nécessaire.

A partir de ces observations, le Secrétariat du CSAO a identifié six domaines dans lesquels le débat sur l'agriculture en Afrique de l'Ouest doit être renforcé, avant de pouvoir développer des initiatives saines :

- La diversité de l'agriculture ouest-africaine et une typologie opérationnelle des exploitations.
- La documentation sur la nature de l'adaptation de l'agriculture ouest-africaine face aux processus profonds de transformation, les dimensions spatiales et spécificités sous-régionales des changements en cours ; enfin, les transformations selon les types d'exploitations.
- Les impacts des politiques agricoles et commerciales des pays de l'OCDE sur les producteurs ouest-africains.

- The roles played by technical innovation processes and how agricultural service providers can better support these processes.

- The stakes faced by key categories of actors concerning agricultural transformation, from producers and their organisations through to agri-business, agricultural service providers, regional organisations and policy makers at the national and regional levels.

- Trade-offs between policy objectives and priorities for action in the sector.

Three forward-looking scoping studies were launched in late 2002 to begin to address these concerns:

1. *Transformations in West African agriculture and the role of family farms* (with Camilla Toulmin and Bara Guèye, International Institute for Environment and Development, London and Dakar).

2. *Technical innovation and the transformation of agriculture and family farms in West Africa. What roles for agricultural research and extension?* (with Jean Sibiri Zoundi, INERA, Ouagadougou).

3. *Support for the Réseau des Organisations Paysannes et de Producteurs Agricoles d'Afrique de l'Ouest (ROPPA) in implementing West Africa Economic and Monetary Union's (WAEMU) agricultural policy* (with Laval Tremblay, agricultural policy specialist, Canada, in consultation with ROPPA, Senegal and Burkina Faso)[3].

These studies involved consultations both within and outside the region, with regional producer organisations, agricultural research institutes, rural development specialists, development agencies and the OECD[4].

- Le rôle des processus d'innovation technique et la manière dont les fournisseurs de services agricoles peuvent mieux soutenir ces processus.
- Les enjeux rencontrés par les principales catégories d'acteurs concernant la transformation agricole, depuis les producteurs et leurs organisations jusqu'à l'agro-industrie, les fournisseurs de services agricoles, les organisations régionales et les décideurs politiques nationaux et régionaux.
- Les compromis entre les objectifs des politiques et les priorités d'action dans le secteur.

Trois études prospectives ont été lancées fin 2002 afin de traiter ces questions :

1. *Transformations de l'agriculture ouest-africaine et rôle des exploitations familiales* (Camilla Toulmin et Bara Guèye, Institut international pour l'environnement et le développement, Londres et Dakar).

2. *Innovation technologique dans le processus de changement structurel de l'agriculture familiale en Afrique de l'Ouest. Quel rôle pour la recherche et la vulgarisation agricoles ?* (Jean Sibiri Zoundi, INERA, Ouagadougou).

3. *Appui au Réseau des Organisations Paysannes et de Producteurs Agricoles d'Afrique de l'Ouest (ROPPA) dans la mise en œuvre de la politique agricole de l'Union Economique et Monétaire de l'Afrique de l'Ouest (UEMOA)* (Laval Tremblay, Canada, en consultation avec le ROPPA, Sénégal et Burkina Faso)[5].

Ces études se sont basées sur des consultations, à l'intérieur comme à l'extérieur de la région, avec des organisations régionales de producteurs, des instituts de recherche agricole, des spécialistes du développement rural, des agences de développement et l'OCDE[6].

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3 Copies of these studies can be obtained from Sylvie Letassey (sylvie.letassey@oecd.org).

4 In addition, drafts of the first two reports were discussed at an internal SWAC Secretariat/OECD feedback meeting in February 2003 supplemented by comments from a former Secretary of State for agriculture in the region; comments from ROPPA were taken into account in finalising the third report.

5 Des exemplaires de ces études peuvent être obtenus auprès de Sylvie Letassey (sylvie.letassey@oecd.org).

6 De plus, les versions préliminaires des deux premiers rapports ont fait l'objet de discussions lors de la réunion interne du Secrétariat du CSAO/OCDE tenue en février 2003, complétées par les commentaires d'un ancien Secrétaire d'Etat chargé de l'agriculture de la région ; les commentaires du ROPPA ont été pris en considération dans la finalisation du troisième rapport.

This was combined with a review of the literature and practice. As a result these papers provide a unique overview of practice, an empirically grounded analysis of structural trends and an outline of current challenges for policy and practice concerning agriculture in West Africa. Each paper begins with an Executive Summary in both English and French, geared to presenting the essential trends and arguments arising from the analysis and key recommendations.

It is hoped that the conclusions of these studies, coupled with consultation of SWAC stakeholders and regional specialists, will provide the groundwork for the SWAC Secretariat's work on agriculture and rural development in the coming years. This will aim to combine strategic analysis of trends on the ground with operational conclusions that can inform the development of concrete initiatives implemented by regional development actors.

To inform our Work Programme, we invite readers to send us feedback on the data and trends presented, the priority actions identified and recommendations for follow up contained in these studies. We would be pleased to receive suggestions on areas where collaboration with specific regional actors would be fruitful and where synergies with parallel initiatives might be developed

We look forward to your reactions in due course.

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Ce travail de consultation s'est accompagné d'un état des lieux de la littérature et des pratiques disponibles. Ces études offrent donc à la fois une présentation unique des pratiques existantes, une analyse empirique des tendances structurelles et une description des défis actuels de l'agriculture en Afrique de l'Ouest pour l'élaboration de politiques et de pratiques. Chaque étude commence par un résumé exécutif en français et en anglais visant à présenter les grandes tendances et idées, issues de l'analyse et des principales recommandations.

Les conclusions de ces études, combinées à la consultation des acteurs du CSAO et des spécialistes de la région, devraient constituer la base de travail du SCSAO dans les domaines de l'agriculture et du développement rural pour les prochaines années. Ce travail visera à combiner l'analyse stratégique des tendances sur le terrain avec les conclusions opérationnelles pouvant inspirer le développement d'initiatives concrètes mises en œuvre par les acteurs régionaux du développement.

Afin d'enrichir notre programme de travail, nous invitons nos lecteurs à nous faire part de leurs commentaires sur les données et tendances présentées, les actions prioritaires identifiées et les recommandations de suivi contenues dans ces rapports. Nous aimerions particulièrement recevoir des suggestions dans les domaines où il serait possible de développer une collaboration fructueuse avec certains acteurs régionaux et des synergies avec des initiatives parallèles.

Nous attendons avec impatience de connaître vos réactions.

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Transformations in West African Agriculture and the Role of Family Farms

Camilla TOULMIN and Bara GUÈYE

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LIST OF ABBREVIATIONS

ACP	Africa-Caribbean-Pacific
AGOA	Africa Growth and Opportunity Act
AGRHYMET	Centre Régional de Formation et d'Application en Agro-météorologie et Hydrologie Opérationnelle (du CILSS)
CAP	Common Agricultural Policy (European Union)
CFAF	West African Monetary Union franc
CILSS	Comité Inter-états de Lutte contre la Sécheresse au Sahel
CIR	Carte d'Identité Rurale
CIRAD-TERA	Centre de Coopération Internationale en Recherche Agronomique pour le Développement Département Territoires, Environnement et Acteurs (France)
CMA / AOC	Conférence des Ministres de l'Agriculture de l'Afrique de l'Ouest et du Centre
CMDT	Compagnie Malienne pour le Développement des Textiles
CNCR	Comité National de Concertation des Ruraux (Senegal)
DAC	Development Assistance Committee of the OECD
EBA	Everything But Arms
ECOLOC	Programme to revive local economies in West Africa
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreement
ETN	EU Trade Network
FAO	Food and Agriculture Organisation
FUPRO	Fédération des Unions de Producteurs (Benin)
GDP	Gross Domestic Product
GOPDC	Ghana Oil Palm Development Corporation (GOPDC)
HIPC	Highly Indebted Poor Country
IIED	International Institute for Environment and Development (UK)
IITA	International Institute of Tropical Agriculture
IPCC	Inter-governmental Panel on Climate Change
LDC	Least Developed Country
MDG	Millennium Development Goal
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organisation
NTB	Non-tariff barrier
OECD	Organisation for Economic Co-operation and Development
PADCLA	Project to Support Skills Development for Agricultural Leaders in Western Africa
PAF	Projet Agro-forestière (Burkina Faso)
PO	Producer Organisation
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Process
ROPPA	Réseau des Organisations Paysannes de l'Afrique de l'Ouest
SEXAGON	Syndicat des Exploitants Agricoles à l'Office du Niger (Mali)
SKBo	An approach to local development across borders in the Sikasso–Korhogo–Bobo Dioulasso area
STABEX	The European Commission's compensatory finance scheme to stabilise export earnings of the ACP countries (for agricultural products)
SWAC	Sahel and West Africa Club (OECD)
SWC	Soil and Water Conservation
UPA-DI	Union des Producteurs Agricoles - Développement International (Canada)
UEMOA	Union Economique et Monétaire Ouest-Africaine
WALTPS	West Africa Long Term Perspective Study
WTO	World Trade Organisation

Transformations in West African Agriculture and the Role of Family Farms

EXECUTIVE SUMMARY

This report, commissioned by the Sahel and West Africa Club (SWAC) Secretariat, examines changes in West African agricultural systems, the major challenges being faced by millions of smallholders in the region, and pathways for the future, given international pressures and domestic constraints. Based on consultations and analysis of key issues, this scoping study was undertaken to lay the ground work for the development of a longer programme on the transformation of West African agriculture. This aims, among others, to strengthen debate on West African agriculture, the role of family farms and trade policy at national, regional and global levels. The proposed programme aims to identify and document how agricultural patterns and livelihoods are evolving in different parts of the region, to identify winners and losers, to outline the impact of OECD trade and agricultural policy on farming livelihoods, and to highlight the opportunities for producer organisations to influence policy design and negotiations – all in partnership with diverse organisations and interests in West Africa.

Agriculture is a central sector of West African economies, contributing a third of GDP, occupying 50-80% of the population, and providing a major share of export earning and government revenue. Looking towards the future:

- There is a growing demand within the region for more diverse grains, fruit, vegetables, meat and dairy produce, which may be met by a mix of domestic production, sub-regional sources and imports from other major producers.[7]
- Land will be increasingly scarce and valuable, especially in peri-urban areas and high-potential zones. A pragmatic approach is needed to provide greater security for smallholder farmers, to encourage investment and productivity growth.
- Smallholder farmers must organise to lobby their governments to ensure their priorities are taken into account in new strategy and policies, not only in the agricultural sector but also in related fields, such as land tenure and trade negotiations.
- The future for these family farms depends on agricultural trade negotiations under the WTO Doha round, to cut over-production and dumping by richer countries, as well as easier access to developed country markets.
- Reliance by West African farmers on traditional export crops does not provide a secure route out of poverty, given global over-production, declining terms of trade, and tariff escalation on processed produce.
- The sincerity of OECD countries' commitment to meeting the MDGs will be seriously tested by whether they are ready to cut farm subsidies, and help smallholders in poor countries "grow their way out of poverty".

Differences in past agricultural performance are largely explained by the effects of policy, market incentives, and climatic factors. Rural people continue to diversify their activities to cope with change, including rising levels of migration within and out of the region and it is estimated that 70-80% of rural people fall below the poverty line in almost all West African countries. Lack of data makes it difficult to assess changes in poverty levels over the last 20-30 years. Some longitudinal case studies suggest many rural communities have become better-off. However, economic collapse and conflict have brought a rapid descent into poverty for some populations, such as in Côte d'Ivoire.

There have been major long-term changes in the structure and character of West African agriculture. These include the power exerted by rapid urbanisation throughout the urban hinterland, with towns

[7] For example: the European Union, United-States, Latin America, and South East Asia.

and cities providing markets, a source of income and economic opportunity; the changing structure of farm households, and growing individualism; diversification of incomes and activities, especially migration earnings; new crops and niche products; rising scarcity and value of land, especially in peri-urban areas; and the greater role of private sector operators in input supply, marketing and contract farming systems. At the same time, the emergence of producer organisations offers the possibility of getting farmers' voices heard at high levels of government.

Weak performance of the farming sector in West Africa is usually attributed to supply factors (e.g. rainfall and land availability). But farmers here, like those throughout the world, are also concerned by returns from investment. Low prices, limited market access, uncertain transport, high transaction costs, and very limited access to inputs, set tight constraints on performance. The persistence of family farms is testimony to their adaptability, despite harsh challenges. Family farms adapt to changing market conditions by switching between crops and exploring new niches while coping with severe constraints. Continued growth in output of many crops despite stagnating or declining prices demonstrates their capacity to compete. However, this has its limits, leading to squeezing of margins, inability to renew equipment, difficulties in maintaining soil fertility and soil conservation investments, and the discouraging of youth from remaining in this sector.

"Family farming" or "*agricultures familiales*" provides the overwhelming share of agricultural production in West Africa. Its fundamental characteristics concern the link between economic, social and cultural dimensions, and multiple objectives, achieved through balancing individual and collective goals, risk reduction by diversifying activities and sources of income, and a degree of independence from market relations. Nevertheless, there is diversity within the sector, with 2-3 person households at one end, and substantial domestic groups of 80-100 people at the other extreme. West African agriculture is to a very large extent based on family farms, which produce almost all food grains, oil seeds, cotton, cocoa, coffee and other crops. Exceptions concern rubber, palm oil, and sugar for which commercial plantations provide a major share.

A clearer definition is needed of "family farming" to acknowledge their diversity, the nature of support they require for continued growth, and their ability to seize new opportunities. A threefold classification is proposed, but it should be remembered that these groupings are not watertight. There may also be movement by households between categories over time.

- ***Type 1***: farmers oriented towards the market, organised around a major cash crop, such as cotton, cocoa, coffee, fruit and vegetables. Often highly specialised, they are exposed to significant risks from fluctuations on global market prices.
- ***Type 2***: farms in which cereal and cash crops are largely balanced in terms of relative importance. Such farms often pursue considerable diversification to protect themselves from climatic and market risks.
- ***Type 3***: farms oriented towards grain production for household needs, some part of the harvest sold to raise cash. They constitute the poorer households with limited access to inputs and markets, little equipment and few livestock. In many places, these households are finding it particularly difficult to make ends meet and are undergoing a process of decapitalisation leading eventually to their disappearance.

Many West African governments note the need for agricultural "modernisation" associated with large-scale commercial farms, relying on hired labour, modern technology, and mechanisation. A contrast is often drawn with the small-scale family farm, its reliance on backward technology, subsistence orientation, and low productivity. Governments are interested in promoting large-scale irrigation and agribusiness to enable agriculture to respond to new markets and standards, and raise levels of productivity. This represents a caricature of both large and small-scale farms. Large-scale commercial farms in West Africa have been high cost producers, very vulnerable to changes in markets, and access to cheap credit, and are the first to collapse into bankruptcy when conditions change. By contrast, small-scale producers have been responsible for the vast majority of food and cash crop production,

responding to improved incentives when prices are right. A clearer assessment is needed of the strengths and weaknesses of the small farm sector, how to support its development and responsiveness to changing market conditions. Attention needs to be paid to ensuring better balance in the preferences granted to large and small-scale farmers (access to land, cheap credit, etc.) so that the latter gain a fairer share of available opportunities.

The adverse impacts of trade and agricultural policy in OECD countries on the developing world are gaining recognition, with evidence showing the damaging effects of farm subsidies paid to rich country farmers. Adverse impacts stem from:

- Downward pressure on world market prices caused by over-production from rich country farmers who are protected from falling prices and have no incentive to cutback output when demand is falling.
- Unfair competition in third country markets, given the export subsidies provided to sell-off surplus stock.
- Adverse impacts on local farmers from surplus farm produce being sold at below cost price, making it increasingly difficult for local farmers to earn a living, and discouraging investment in agricultural intensification.

The scale of OECD member state subsidies to their own farmers at some $350b per year has mobilised opposition to such continued largesse, given the comparison with budget allocations to overseas aid or debt relief.

There are many arenas for discussion of trade and agricultural policy.[8] The Poverty Reduction Strategy (PRS) process is one avenue for ensuring coherence between strategic policy objectives in trade, agriculture and poverty reduction. Equally there is ongoing work on fair or ethical trade, and associated certification systems. Civil society groups in OECD nations have launched several networks to influence negotiations by campaigns for better access to rich country markets including tariff reductions for processed commodities, and cutbacks in non-tariff barriers; abolition of production related subsidies under the Common Agricultural Policy (CAP) and US Farm Bill; abolition of agricultural export subsidies and rights for Least Developed Countries (LDCs) to protect their own farmers, especially against dumping; and strengthened capacity for negotiation at national and global levels.

There is a growing body of producer organisations, federations, and some NGOs within the West African region with an interest in trade organisations. Such groups require support to enable them to fulfil their promise, maintaining strong links to the people they represent, and enhancing their ability to voice the interests of their members in national and global fora. ROPPA is a central actor in this network of regional organisations.

To work in this field, the SWAC needs to consider its comparative advantage and where best it can add value to the number and diversity of existing initiatives. Priority arenas, topics, and partnerships must be chosen to ensure an effective focus. Key to this process will be close working relations with existing initiatives, strengthening relations with partners in West Africa, iterative debate on priority themes, and responsiveness to new openings in the debate. WTO negotiations are the highest level at which trade and agriculture are addressed, with all other processes referring to the need for WTO compliance. A large proportion of West African states fall into the category of Least Developed Countries (LDCs) and face more favourable negotiating conditions under the WTO and Cotonou Agreement, given the non-reciprocal nature of their obligations. West African countries and regional

[8] Such as the current WTO negotiations, CAP reform, the Everything But Arms initiative (EBA), the US's Africa Growth and Opportunity Act (AGOA) and Millennium challenge, the New Programme for Africa's Development (NEPAD) and the International Initiative on African Agriculture.

bodies need to consider their room for manoeuvre, given their status as LDCs as regards protection of domestic food production and trade-related benefits.

The SWAC Secretariat might best add value to these processes in the following areas:

- Consultation and providing a platform for discussion amongst stakeholders in West Africa on priorities for agricultural development, trade negotiations and the trade-offs involved with different options.
- Identifying key themes with West African partners for action research to highlight the implications of current trends and policy measures, distributional implications, and choices to be made.
- Working with government and civil society groups in OECD member states to push for greater policy coherence, and understanding of the global risks associated with short-term considerations of electoral politics at home.
- Feeding materials and ideas into high-level global debate, to inform stakeholders of the interlinkages between trade and farm policy in countries north and south, and to build bridges between different constituencies, based on the influence, access and reputation of the SWAC.

Transformations de l'agriculture en Afrique de l'Ouest et rôle des exploitations familiales

RÉSUMÉ

Ce rapport, réalisé à la demande du Secrétariat du Club du Sahel et de l'Afrique de l'Ouest (CSAO), analyse l'évolution des systèmes agricoles en Afrique de l'Ouest, les principaux défis auxquels sont confrontés des millions de petits exploitants de la région et les perspectives pour l'avenir, compte tenu des pressions internationales et des contraintes nationales. Réalisée à partir de consultations et d'une analyse des enjeux clés, cette étude préliminaire a été entreprise dans le cadre d'une proposition d'un programme de plus grande envergure sur la transformation de l'agriculture ouest-africaine. Ce programme a notamment pour objectif de renforcer le débat sur les politiques agricoles et commerciales ouest-africaines aux niveaux national, régional et mondial. Il vise à identifier et à documenter l'évolution des structures et des sources de revenus agricoles dans différentes parties de la région ; à déterminer les gagnants et les perdants ; à définir l'impact de la politique commerciale et agricole des pays membres de l'OCDE sur les revenus agricoles ; enfin, à mettre en lumière les opportunités pour les organisations de producteurs d'influencer la définition des politiques et les négociations – le tout en partenariat avec divers intérêts et organisations présents en Afrique de l'Ouest.

L'agriculture est un facteur central des économies ouest-africaines, contribuant à un tiers du PNB de la région, occupant 50 à 80 % de la population et représentant la majorité des revenus d'exportations et des revenus de l'État. Les perspectives d'avenir sont les suivantes :

- Il existe dans la région une demande croissante pour une plus grande variété de céréales, fruits, légumes, viandes et produits laitiers qui peut être satisfaite grâce à une combinaison de la production nationale, des sources sous-régionales et d'importations en provenance des autres régions productrices[9].

- La terre devient de plus en plus rare et précieuse, en particulier dans les zones périurbaines et celles à fort potentiel agricole. Il est nécessaire d'adopter une approche pragmatique pour mieux garantir la sécurité des petits exploitants et encourager la croissance des investissements et de la productivité.

- Les petits exploitants doivent s'organiser pour faire pression sur leurs gouvernements et s'assurer que leurs priorités soient bien prises en compte dans les nouvelles stratégies et politiques, non seulement dans le secteur agricole, mais également dans les domaines connexes, comme le régime foncier et les négociations commerciales.

- L'avenir de ces exploitations familiales dépend des négociations commerciales agricoles, amorcées par l'OMC à Doha, pour réduire la surproduction et le dumping des pays riches, ainsi que pour faciliter l'accès aux marchés des pays développés.

- Les cultures exportatrices traditionnelles ne constituent pas pour les agriculteurs ouest-africains un moyen sûr de sortir de la pauvreté, compte tenu de la surproduction globale, de la détérioration croissante des termes de l'échange et de la forte hausse des protections tarifaires sur les produits agricoles transformés.

- La sincérité de l'engagement des pays membres de l'OCDE à respecter les Objectifs du millénaire pour le développement (Millenium Development Goals-MDGs) sera sérieusement mise à l'épreuve pour voir s'ils sont véritablement prêts à réduire les subventions agricoles et à aider les petits exploitants des pays pauvres à « sortir de la pauvreté en augmentant la production agricole».

9 Par exemple, l'Union Européenne, les Etats-Unis, l'Amérique latine et l'Asie du Sud-Est.

Les écarts passés entre les performances agricoles s'expliquent largement par les effets des politiques menées, les incitations du marché et les facteurs climatiques. La population rurale continue de diversifier ses activités pour s'adapter aux changements, notamment l'augmentation des flux migratoires à l'intérieur et à l'extérieur de la région. De plus, on estime que 70 à 80 % de la population rurale sont au-dessous du seuil de pauvreté dans presque tous les pays de l'Afrique de l'Ouest. L'absence de données rend difficile une évaluation de l'évolution des niveaux de pauvreté sur les 20-30 dernières années. Cependant, l'effondrement économique et les conflits ont provoqué un accroissement brutal de la pauvreté pour certaines populations comme celle de la Côte d'Ivoire.

La structure et la nature de l'agriculture ouest-africaine ont connu d'importantes évolutions sur le long terme. Ces changements incluent le pouvoir exercé à travers tout l'arrière-pays urbain par une urbanisation rapide, les petites et grandes villes fournissant les marchés, sources de revenu et d'opportunités économiques ; l'évolution de la composition des foyers agricoles et la montée de l'individualisme ; la diversification des revenus et des activités, en particulier des revenus de la migration ; l'apparition de nouvelles cultures et de produits spécialisés ; une pénurie et une valeur croissantes des terres, en particulier dans les zones périurbaines, et le rôle plus important des opérateurs du secteur privé dans l'apport d'intrants, le marketing et les systèmes d'agriculture sous contrat. En même temps, l'émergence des organisations de producteurs offre la possibilité pour les agriculteurs de se faire entendre à des niveaux élevés du gouvernement.

La faible performance du secteur agricole en Afrique de l'Ouest est généralement attribuée aux facteurs de l'offre (par exemple, la pluviométrie et la disponibilité des terres). Toutefois, les agriculteurs africains, comme leurs homologues du monde entier, s'intéressent également aux retours sur investissements. Des prix bas, un accès limité aux marchés, des transports peu fiables, des coûts de transaction élevés et un accès très restreint aux intrants limitent considérablement la performance. La persistance de l'agriculture familiale atteste de sa capacité à s'adapter malgré les difficultés. Les exploitations familiales suivent l'évolution des marchés en changeant de cultures et en explorant de nouvelles spécialités tout en faisant face à des contraintes difficiles. La croissance continue de la production de nombreuses cultures, malgré des prix stables ou en baisse, démontre leur capacité à rester compétitives. Cette capacité a cependant ses limites puisqu'elle conduit à une compression des marges, une incapacité à renouveler le matériel, des difficultés à maintenir les investissements pour la fertilité et la conservation des sols, ainsi qu'au découragement des jeunes à rester dans ce secteur.

L'agriculture familiale fournit la plus grande part de la production agricole en Afrique de l'Ouest. Ses caractéristiques fondamentales viennent du lien existant entre les dimensions économiques, sociales et culturelles. Elles répondent à des objectifs multiples, qui sont atteints par l'équilibre entre les objectifs individuels et collectifs, la réduction des risques grâce à la diversification des activités et des sources de revenu, ainsi que par le maintien d'un certain degré d'indépendance par rapport aux relations commerciales. Ce secteur reste cependant diversifié, avec d'un côté, des foyers de 2-3 personnes et de l'autre des groupes domestiques considérables de 80 à 100 personnes. L'agriculture ouest-africaine repose, dans une très large mesure, sur les exploitations familiales qui produisent presque la totalité des céréales, des oléagineux, du coton, du cacao, du café et autres cultures. Les exceptions concernent le caoutchouc, l'huile de palmier et le sucre, dont la plus grande partie de la production est organisé sur des plantations commerciales.

Une définition plus claire de l'agriculture familiale est nécessaire pour reconnaître sa diversité, la nature du soutien dont elle a besoin pour poursuivre son développement et sa capacité à saisir de nouvelles opportunités. Une typologie en trois groupes est proposée, mais il ne faut pas oublier que ces groupes ne sont pas hermétiques. Un même foyer peut aussi évoluer avec le temps.

- ***Type 1 :*** exploitations orientées vers le marché, organisées autour d'une principale culture d'exportation, comme le coton, le cacao, le café, les fruits et les légumes. Souvent fortement spécialisées, ces exploitations sont sujettes aux risques importants de fluctuations sur les marchés globaux.

- ***Type 2 :*** exploitations dans lesquelles les céréales équilibrent largement les cultures d'exportations en termes d'importance relative. Ces exploitations pratiquent souvent une forte diversification pour se protéger contre les aléas climatiques et les risques du marché.

- ***Type 3***: exploitations orientées vers la production de céréales pour les besoins domestiques, avec vente d'une part de la récolte pour obtenir de l'argent. Cette catégorie regroupe les foyers les plus pauvres ayant un accès limité aux intrants et aux marchés, peu de matériel et peu de cheptel. Dans de nombreux endroits, ces foyers connaissent d'importantes difficultés à subvenir à leurs besoins et vivent un processus de décapitalisation qui conduit un jour ou l'autre à leur disparition.

Les gouvernements ouest-africains sont nombreux à constater la nécessité d'une « modernisation » de l'agriculture, associée à des exploitations commerciales de grande taille, ayant recours à une main-d'œuvre salariée, à une technologie moderne et à une mécanisation. Le contraste est important entre ce type d'exploitation et la petite exploitation familiale, aux moyens technologiques dépassés, orientée vers les cultures de subsistance et à faible productivité. Les gouvernements souhaitent promouvoir une irrigation de grande échelle et l'agroalimentaire pour permettre à l'agriculture de répondre aux nouveaux marchés et aux nouvelles normes et ainsi améliorer la productivité. Cette vision est caricaturale à la fois des grandes et des petites exploitations. Les grandes exploitations commerciales d'Afrique de l'Ouest ont été des producteurs à coût élevé, très vulnérables aux aléas du marché et à l'accès au crédit bon marché. Elles sont de plus les premières à faire faillite en cas d'évolution défavorable des conditions. A l'inverse, les petits producteurs sont responsables de la grande majorité de la production de cultures vivrières et d'exportation, réagissant à l'amélioration des incitations lorsque les prix sont justes. Il est nécessaire de mieux évaluer les forces et faiblesses du petit secteur agricole, les moyens de soutenir son développement et son adaptation aux aléas du marché. Il faut veiller à assurer un meilleur équilibre entre les préférences accordées aux grands et aux petits exploitants (accès aux terres, crédit bon marché, etc.), pour que ces derniers puissent profiter d'une part plus juste des opportunités disponibles.

Les impacts néfastes de la politique commerciale et agricole des pays de l'OCDE sur le monde en développement sont de plus en plus reconnus, en particulier les effets des subventions agricoles versées aux agriculteurs des pays riches. Ces impacts négatifs sont dus à :

- La pression vers le bas, exercée sur les prix du marché au niveau mondial, par la surproduction des agriculteurs des pays riches, protégés contre la chute des prix et n'ayant donc aucune raison de réduire leur production lorsque la demande baisse.

- La concurrence inégale sur les marchés des pays tiers, étant donné les subventions à l'exportation fournies pour liquider les surplus.

- Les effets négatifs pour les agriculteurs locaux de la vente des surplus agricoles à un prix inférieur au prix de revient, ce qui rend difficile la survie des agriculteurs locaux et décourage l'investissement pour une intensification agricole.

L'importance des subventions gouvernementales des États membres de l'OCDE – quelque 350 milliards de dollars US/an – suscite une opposition à la poursuite de telles largesses, en particulier en comparaison avec les allocations d'aide à l'étranger ou à la réduction de la dette.

Il existe de nombreux forums de discussion des politiques commerciales et agricoles[10]. Le processus de l'élaboration de Documents de Stratégie de Réduction de la Pauvreté (DSRP) est l'une des procédés retenus pour assurer la cohérence entre les objectifs stratégiques dans le domaine du

[10] Notamment les négociations actuelles de l'OMC, la réforme de la PAC, l'initiative "Everything but arms" (Tout sauf des armes ou EBA), la loi américaine sur l'Afrique subsaharienne (AGOA) et le défi du Millénaire (Millenium challenge), le Nouveau partenariat pour le développement de l'Afrique (NEPAD) et l'Initiative internationale sur l'agriculture africaine.

commerce, de l'agriculture et de la réduction de la pauvreté. De plus, une réflexion est actuellement en cours sur le commerce équitable ou éthique et ses systèmes de certification. Certains groupes de la société civile des pays de l'OCDE ont mis en place des réseaux pour influencer les négociations par le biais de campagnes pour un meilleur accès aux marchés des pays riches, notamment grâce à la réduction des protections douanières sur les produits transformés et à des coupes dans les barrières non tarifaires ; l'abolition des subventions liées à la production dans le cadre de la Politique agricole commune et de la loi américaine sur l'agriculture (*US Farm Bill)* ; l'abolition des aides à l'exportation et le droit pour les Pays les Moins Développés (PMD) de protéger leurs propres agriculteurs, en particulier contre le dumping ; et une meilleure capacité de négociation aux niveaux national et mondial.

Il existe un nombre croissant d'organisations de producteurs, de fédérations et quelques ONG intéressées par les organisations commerciales, au sein de la région de l'Afrique de l'Ouest. Ces groupes ont besoin d'être soutenus pour pouvoir tenir leurs promesses, maintenir des liens forts avec les populations qu'ils représentent et renforcer leur capacité à faire entendre leur voix et les intérêts de leurs membres dans le cadre des forums nationaux et mondiaux. Le ROPPA est au centre de ce réseau d'organisations régionales.

Pour travailler dans ce domaine, le CSAO a besoin de définir son avantage comparatif et déterminer où il peut le plus contribuer aux nombreuses et diverses initiatives existantes. Des domaines, des sujets et des partenariats prioritaires doivent être établis pour assurer une concertation efficace. Ce processus dépendra essentiellement d'une étroite collaboration avec les initiatives existantes, du renforcement des relations avec les différents partenaires présents en Afrique de l'Ouest, des réflexions récurrentes sur les thèmes prioritaires et de la capacité de répondre aux nouvelles avancées dans le débat. Les négociations de l'OMC représentent le plus haut niveau de discussions des questions commerciales et agricoles, tous les autres processus faisant référence à la nécessité de se conformer aux décisions de l'OMC. Une grande partie des États ouest-africains appartiennent à la catégorie des Pays les moins développés (PMD) et bénéficient à ce titre de conditions de négociations plus favorables dans le cadre de l'OMC ou de l'Accord de Cotonou, en raison du caractère non réciproque de leurs obligations. Les pays et institutions régionales de l'Afrique de l'Ouest doivent réfléchir à leur marge de manœuvre, compte tenu de leur statut de PMD, pour la protection de leur production agricole et des avantages liés à sa commercialisation.

Le Secrétariat du CSAO pourrait être particulièrement utile pour ces processus dans les domaines suivants :

- Consultation et fourniture d'une plate-forme de discussion entre les acteurs de l'Afrique de l'Ouest sur les priorités pour le développement agricole, les négociations commerciales et les compromis impliqués dans les différentes options.

- Identification des thèmes clés avec les partenaires ouest-africains pour la recherche action afin de mettre en évidence les implications des grandes orientations et politiques actuelles, de la distribution et les choix à faire.

- Travail avec les gouvernements et les groupes de la société civile des pays membres de l'OCDE pour faire pression en faveur d'une meilleure cohérence des politiques et d'une compréhension des risques globaux associés aux considérations à court terme de la politique électorale de leurs pays respectifs.

- Alimenter un débat mondial de haut niveau, en documentation et idées ; informer les acteurs des liens entre les politiques commerciales et agricoles dans les pays du Nord et du Sud et mettre en place des contacts entre les différentes bases, en s'appuyant sur l'influence, le réseau et la réputation du CSAO.

I. INTRODUCTION

This paper was prepared as an initial scoping study for the Sahel and West Africa Club (SWAC) Secretariat to provide the basis for developing a longer term programme of work to examine the transformations underway in West African agriculture, and the challenges faced by smallholder production systems. The following question was a key driver behind this work: *what is the future of the family farm in West Africa, in the light of the enormous changes that have taken place within agriculture over the last two decades and further likely changes to come?*

The broad objectives of the overall initiative were to:

- Raise debate regarding agricultural policy and the future of family farming in West Africa, at national, regional and international levels;
- Highlight key issues and trade-offs between policy objectives;
- Develop partnerships with West African organisations, and support their strategies for engaging with policy debate nationally, regionally, and internationally;
- Identify and document impacts from OECD agricultural and trade policy on prospects for West Africa's farmers;
- Develop partnerships with OECD-based groups working on trade issues, to ensure the voices of West African producers are better heard and taken into account.

This initial scoping study has involved the collection of background material, consultation with groups in West Africa and OECD countries *(see Annex 3)*, and preparation of this paper. A detailed proposal for future work to build on the results presented here has been prepared to feed into SWAC discussions on follow up.

This work on the *Transformation of West African Agriculture and the Role of Family Farms* has close linkages to several other areas of work being undertaken by the Sahel and West Africa Club, notably:

- Promoting competitiveness of the West African economy, exploring the drivers for change and adaptive capacity within indigenous structures, assessing the impact of OECD member state policies on agriculture and trade on West African producers, and mapping regional economic spaces with respect to potential economic opportunities and comparative advantage;
- The strengths and weaknesses of research and extension, as means to enable family agriculture to innovate in a changing environment, promoting dialogue between multiple actors on ways to "modernise" the agricultural sector, and support regional producer organisations (ROPPA) to influence national and sub-regional policy as it relates to agriculture and trade negotiations;
- Strengthening a mapping approach to understanding the spatial dimensions of economic development and change, the analysis of opportunities and challenges within cross-border areas with tightly woven flows of trade and people;
- Issues of governance, within a context of decentralisation, and understanding the dynamics and causes of conflict.

At the same time, the proposed follow-up to this scoping study provides potential for developing strong partnerships within both the West African region and OECD member states. In the first case, a multi-stakeholder approach is essential to strengthen opportunities for poorly represented groups to get their voices heard in the design and implementation of agricultural policy. Here, the role of producer organisations is of particular importance. In the second case, there are a large number of groups, networks, and arenas within which questions of agricultural reform and trade negotiations are being discussed, as well as a move towards greater policy coherence across the fields of trade reform and poverty reduction. Consequently, the SWAC has multiple opportunities to develop a programme of

work in this field which would neatly complement other ongoing work and make a major contribution to its overall objectives.

Finally, it is important to note that this scoping study was developed through two interlinked processes of review and consultation.

- A series of consultations was held in the West African region with key resource people and institutions, through interviews and several workshops in the West Africa region (*see Annex 2* for a list of people met and contacted). At the same time, a range of organisations in OECD member states were approached to understand better their involvement with trade, development and agricultural policy issues both within Europe and North America and in West Africa. These consultations have had the objective of raising levels of debate as regards the main challenges and difficulties faced by agriculture in West Africa, in the current global context. These meetings and discussions also have provided the basis for building future alliances on the future of West African agriculture.
- An extensive review of the literature was undertaken on the evolution of agricultural production, poverty and livelihoods in different parts of West Africa. This review was complemented by commissioning studies by several experts in the field.

II. THE ROLE OF AGRICULTURE IN WEST AFRICAN DEVELOPMENT

Agriculture remains a centrally important part of the West African economy, providing 30–50% of GDP in most countries, the major source of income and livelihoods for 70–80% of the population, food supplies and revenue from export of cash crops. While the economies and peoples of the region are diversifying into a range of other activities, farming is likely to remain of central significance to incomes and livelihoods for the foreseeable future (Fafchamps, *et al*. 2001). In the early years following independence, most countries followed state-led policies aimed at rapid economic growth, based on industrialisation and taxation of the agricultural sector. Such approaches brought disappointment and led to great structural changes in the 1980s, with the introduction of structural adjustment programmes and greater attention to the importance of agriculture as the basis for economic growth. The current focus of donors and governments on meeting the Millennium Development Goals has refocused attention on the rural economy, given that it is estimated that 70% of the world's poorest people are rural dwellers. Improvements to the productivity and returns gained from agriculture have been identified as a key means to reach the poverty reduction targets. Governments in the region are therefore interested in seeing how agriculture might be "modernised" better to meet the many demands made of it.

Important questions remain regarding what is meant by "modernisation", whether agriculture can "modernise" on the basis of the smallholder family farm sector, and consequences for meeting poverty reduction targets if governments favour large-scale over smallholder farms. Equally, agricultural policy has multiple linkages with other government strategies and associated measures. For example, new land tenure legislation will affect the structure and performance of the farming sector. There are also important trade-offs to consider between support to large-scale commercial farms and broader objectives in relation to productivity and equity.

Access to land and natural resources has increasingly become a political issue, with the rise in multiparty activity. The association of different parties with ethnic or economic interests, and their relations with customary leaders have served to politicise land questions, adding further tensions to local land conflicts. Those in dispute seek to gain support from higher level political figures as a means of pursuing their case, leading to an escalation of the issues at stake. Competition over land and resources have thus become a major source of conflict.

III. TRANSFORMATIONS IN WEST AFRICAN AGRICULTURE AND FAMILY FARMING

3.1. Definitions and typologies

Family farming, or *agriculture familiale*, although widely used as a term, covers a broad range of situations which are often very different. Thus, some authors strongly advise the use of the term in its plural form (*agricultures familiales*) to demonstrate the diversity of systems and contexts under discussion (Belières, *et al*. 2002). The organisation and practice of farming systems vary greatly between agro-ecological zones, from one country to another, and between different socio-cultural groups. Within such diversity, however, there are certain key features which characterise family farming, relating to the particular connection between the structure and composition of the household and its associated farm assets and activities. This relationship has important implications for how decisions are made regarding the choice of crops, the organisation of family labour and its allocation to different tasks, management of farm land and other assets, and questions of inheritance (CIRAD-TERA in Belières, *et al.* 2002). In most parts of West Africa, farm production is based on family labour which, while often unpaid, is assured a return in the form of longer term rights and expectations. Thus, family farms rely on labour contributions from their various members who, in return, will receive food and shelter, support in times of illness and old age, and help with costs of marriage, tax payments, and so on. Equally, commitment of labour to the family farm enterprise ensures its members maintain their rights to the family's property, when a division of the estate takes place. This web of mutual obligations and rights is under strain in many areas, as a result of economic pressures, shifts in religious and cultural values, and the breakdown of large domestic groups into smaller nuclear units.

While agricultural production relies heavily on family labour, non-household labour can often provide a significant additional source. Many farmers rely on hiring labour from other families in the village or on seasonal farm workers for land preparation, cultivation, harvesting and processing their crops. This may be due to insufficient labour being available within the family (as a result of illness, or out-migration) or due to a strategy of agricultural expansion. Thus, it is important to avoid seeing the family farm as an isolated economic unit focused entirely on agriculture and reliant exclusively on its own resources. Further characteristics of family farms typically include a diverse set of activities and outputs involving a range of crop and livestock production, fishing, hunting and gathering, trade and craftwork as well as seasonal or longer term migration (Zoundi, 2003). Family farms often rely on a set of social networks linking relatives and neighbours in near and more distant locations, through which mutual support is provided. Maintenance and investment in these networks constitute an important element in the household's strategy since they can provide an essential safety net in times of crisis. Within the family farm, access to land and farm assets tends to be acquired through inheritance or other social arrangements, such as loans.

Box 1. Family or household?

Family farm or farm household? What is the difference between the two? Which term should be used? *Farm household* is the term usually employed to describe the unit of production which farms a common field and eats from a common granary. In practice, farm households usually operate in more complex ways. For example, individuals within the household may have their own private fields and granaries. Some livestock are owned individually, while others are the joint property of the household as a whole. Several farm households may make up a *larger family group,* which no longer functions as a single production unit. Nevertheless, there may be some residual functions which are carried out by this larger family group, such as the management of lineage land, the planning and negotiation of matrimonial alliances and certain religious ceremonies. Here, we use the term 'family farm' or 'farm household' interchangeably to mean the domestic group which works a common field and eats together, while recognising that, in reality, family life is always more complex than this.

The family farm, its land and associated assets (equipment, livestock, trees, etc.) are under the authority of the household head who is responsible for the collective management of these assets,

the allocation of labour between different activities, management of grain stores, and deciding on new strategies and directions to be pursued. In practice, the household head will often delegate day-to-day management of fields and animals to a younger brother, while monitoring activities closely. The principal objective of the family farm is first to provide its members with food and shelter, second, to sell whatever is needed to gain cash for satisfying the range of other needs of the household, such as clothing, medicines, school fees, investment in new equipment, and tax payments. Surplus crops may be stored to protect against future harvest failure, or sold and reinvested in livestock, other assets or social networks.

Family farms thus are made up of three broad dimensions:

- A socio-cultural dimension, since this form of agriculture is mainly reliant on the human resource base of the family, strongly anchored in a particular community, through a web of relationships and strategies, both individual and collective, and reinforced by values of solidarity and long-term commitment.
- An economic dimension characterised by an integration of diverse activities in household production, given the various opportunities available in immediate and more distant areas, and operating according to the following priorities: consume, store, sell.
- A technical dimension characterised by a desire to maintain and improve the land and resources on which they rely, and combining activities in ways which reduce exposure to risk.

In contrast to commercial enterprises, family farms tend to work relatively small areas of land. In Ghana, for example a study in 1997 showed there to be 800,000 cocoa smallholders, with an average farm size of 3 hectares, of which 60% had less than 2 hectares, and 80% less than 4 hectares (Owusu, 2002). In Benin, farm holding size averages 3.3 hectares (Minot, *et al*. 2001). For Mali, cotton is grown by more than 200,000 farm households averaging 15 people, cultivating 10 hectares. The prioritisation of consumption over commercialisation is, however, undergoing change in many areas, given the growing need for cash, leading to important shifts in how land and labour are allocated between food and cash crops. Equally, grain is an important cash crop for some farmers, as well as providing for the household's food needs.

Table 1: Comparison between family farms and commercial agriculture

Characteristics	Family farms	Commercial agriculture
Role of household labour	Major	Little or none
Community linkages	Strong: based on solidarity and mutual help between household and broader group	Weak: often no social connection between entrepreneur and local community
Priority objectives	Consume Stock Sell	Sell Buy Consume
Diversification	High: to reduce exposure to risk	Low: specialisation on very few crops and activities
Flexibility	High	Low
Size of holding	Small: averaging 5–10ha	Large: may exceed 100ha
Links to market	Weak: but becoming stronger	Strong
Land access	Inheritance and social arrangements	Purchase

Nevertheless, family farms face distinct problems, which include:

- A growing shortage of land and its rapid increase in value, especially in peri-urban areas. Most West African smallholders claim rights over land through customary procedures and do not hold formal paper title. As a result, these land claims may be vulnerable to stronger interest groups who are seeking land and can get governments to back their claims through formal procedures.

- Illiteracy and poor access to schooling for many rural people, so that they have limited power to engage with the formal sector, whether in marketing, producer organisations, or contacts with government. Low levels of literacy may also hinder easy access to new technologies and innovative practices, as well as achieving more effective management of the farm enterprise.
- The low value accorded to the status of an agricultural smallholder, with the sons and daughters of farming households doing their best to escape a life of hard labour for little return. This low status also translates into little respect given to local knowledge and ways of life such as traditional medicine, skills in local craftwork, or systems for classifying grasses, soils and trees.
- The poorly developed organisation of smallholder agricultural producers constitutes a serious problem in a context of rapid integration of marketing and production systems. While government parastatals used to play an important role as providers of inputs and credit, and buyers of certain crops, most governments have been forced to disband these organisations and privatise these functions. In the absence of a well-developed co-operative movement, small farmers have very little organised marketing power or negotiating ability with input suppliers and crop buyers.
- The question of inheritance and fragmentation of land holdings is a serious problem for the viability of the family farm, which benefits from certain economies of scale when able to combine the labour and assets of several family members, rather than being limited to a nuclear family or single individual. While it is not always the rule, the death of the household head often leads to the break-up of the family into two or more separate units, with a division of the land and other assets. This fragmentation can lead to them becoming more vulnerable to risk and less able to maintain the livestock and equipment needed to run the farm.

Farming households are complex and dynamic institutions, which evolve over time, as shown below.

Box 2. Dynamics, diversity and differentiation in West Africa's family farms

Farm households in West Africa are highly diverse in size and structure. In any rural setting, there is usually a wide range of farm households, varying in size from small nuclear groups, comprising a married couple and young children, to larger complex domestic units in which there are several married couples, their children and aged parents. The size and structure of farm households is partly determined by cultural values, but is also the consequence of demographic processes, the skill exercised by the household head, and responses to economic opportunities.

The large, extended farm household traditionally associated with West African agricultural society has undergone major changes in recent generations. In some places, these large groups have broken up into smaller, nuclear families. Such a break-up may be a response by younger men seeking greater autonomy from their elders and no longer being willing to submit to their authority. Thus, Amanor (2001) describes the dissolution of forms of mutual obligations between fathers and sons – the former to provide land, pay tax, and contribute marriage expenses for the latter, who in return are expected to work for the family estate. Similar contests between senior and junior family members are described for Côte d'Ivoire (Chauveau, 2002) and Nigeria (Smith, 1966).

In other contexts, the large extended household remains of great significance. In the village of Zaradougou in southern Mali, for example, 85% of the population lives in large complex households, ranging from 10–90 people in size. These domestic groups combine cotton and maize farms with cocoa and coffee plantations in Côte d'Ivoire as well as livestock, orchards and trading activities. Large size enables a diverse portfolio of incomes and assets (Brock and Coulibaly, 1999). Within these large households, there is commonly a distinction maintained between collective and individual economic activity. Thus, household members are expected to work on the joint family field for a certain part of their time, being free to pursue their own interests in the remaining period. Maintaining a balance between collective and individual economic activity is a key management skill which some family heads master well. Where they fail, large households usually break up into their component units.

…/…

In risk prone environments, there are considerable advantages to living in large domestic units. For example, in the village of Kala in central Mali, larger households were associated with higher levels of livestock wealth (cattle per person) and access to farm equipment (plough teams per person), as well as greater food security (harvest per person). Benefits from shared production and investment in large households (averaging 24 people in size) were substantial. Nuclear families (averaging eight people) were much more vulnerable to risk and were not able to benefit from economies of scale in production, investment and income diversification (Toulmin, 1992). Differentiation between farm households takes place over time as some families do better than others and can increase their control over key assets (land, livestock, labour and capital). Others suffer impoverishment, due to harvest failure, family illness, sale of assets and the need to work for others. Such processes of social differentiation have always existed to some extent. But it is important to ask: are such processes now becoming more significant? Is socio-economic differentiation linked to increased integration with the market economy? How might poorer farm households be enabled to protect their assets at times of crisis and reduce vulnerability to impoverishment?

3.2. Towards a typology of farm households

West Africa exhibits a very diverse array of family farms, in terms of factors such as size, assets, market orientation, income, diversification of activities, reliance on migrants' earnings and vulnerability to risk. A typology of farm households within such diversity depends, as with all classification systems, on the objectives sought. For example, in the cotton-growing region of southern Mali, the CMDT[11] uses a fourfold classification of farm households based on a combination of farm size and type of equipment used, which enables the CMDT to target different kinds of technical advice.

A recent review of family farms in the global setting proposes a three way classification of rural producers (Vorley, 2002), as shown in Box 3 below. The purpose of this typology is to examine levels of market involvement, access to technology and exposure to risk. Such an analysis of rural differentiation shows family farms, such as those in West Africa, largely caught in the second and third categories. While able until now to manage more or less, these farming enterprises may face a more challenging future as local markets and food systems become increasingly globalised.

Box 3. The three rural worlds

Rural world 1: globally competitive, embedded in agribusiness, commodity producers and processors, politically well-connected, export-driven, adopters of Green Revolution and trans-genic technologies.
Rural world 2: locally-oriented, with access to and control over land, multiple and diverse enterprises, undercapitalised, declining terms of trade and at serious risk of future impoverishment.
Rural world 3: fragile livelihoods, limited access to productive resources, multi-occupational migrants straddling rural and urban life, unskilled and uneducated, dependent on low-wage labour, redundant to global food and fibre production systems.

Source: Vorley (2002: 9)

Zoundi (2003) presents a threefold classification of family farms, which echoes the categories outlined above. The first category comprises those with a strong involvement in crop production for the market, and where this guides very substantially the choices made regarding resource allocation. The second category is made up of those farm households largely focused on production for satisfying their own needs. A third intermediary category can be identified for which some balance is maintained between market and subsistence activities. As Zoundi notes, such intermediate households are often those who, while formerly focused on subsistence production, are now allocating more time and resources to market production, as a result of the rising need for cash to satisfy diverse household needs.

[11] Compagnie Malienne pour le Développement des Textiles, the parastatal body responsible for cotton production and marketing.

A threefold classification of this sort seems best, building on the above discussion and corresponding with the range of situations found in different parts of West Africa, the characteristics of each being as follows:

Type 1: farmers oriented towards the market, organised around one of the major cash crops, such as cotton, cocoa, coffee, fruit and vegetables. Often highly specialised, they are exposed to significant risks from fluctuations on global market prices. Within this group can also be found farms in the urban and peri-urban zone, specialised in producing for the market.

Type 2: farms in which cereal production and cash crop activity are more or less balanced in terms of their relative importance. Such farm households often pursue considerable diversification, as a means to protect themselves from climatic and market risks, the level of diversification depending on local conditions, access to land and the size of household.

Type 3: farms oriented towards grain production for subsistence needs, some part of the harvest being sold to raise cash. They constitute the poorer households with limited access to inputs and markets, with little equipment and few livestock. In many places, these households are finding it particularly difficult to make ends meet and undergoing a process of decapitalisation which will lead eventually to their disappearance.

However, it should be recognised that within each of these categories can be found a wide range of households in terms of size, activities, reliance on off-farm sources of income, land tenure situation and so on. Equally, it should be remembered that these are not watertight categories. There is likely to be mobility between these categories over time, and from year to year. For example, a farm household which suffers the loss of a key family member, through out-migration or death, may be forced to re-orient its pattern of production from a market focus to satisfaction of food needs. Conversely, a very good harvest in one year may provide the means for a household to invest in new equipment and pursue a more market-oriented cropping pattern in future.

It is due to this diversity of farm households and their differential ability to respond to market opportunities, invest in productive assets and meet their needs, that has led some observers to pronounce the end of the family farm. Those in favour of promoting investment in large-scale commercial agribusiness can always find examples of impoverished, subsistence-based families, unable to cope with the multiple challenges of prices, climate and risk. Those seeking to demonstrate the dynamism and viability of family farms can point to a very different set of smallholders who have clearly demonstrated their ability to address new markets and adopt new technologies. Policy measures need to consider how best to address the very different needs and pathways associated with each kind of producer.

IV. MAPPING AGRARIAN CHANGE IN WEST AFRICA

West Africa is a highly complex and diverse region, stretching from the deserts of Mauritania, Mali and Niger, southwards to the tropical forest areas of the Gulf of Guinea, and from the hilly savannas of upland Guinea to Sahelian grasslands and extensive rain-fed millet fields. Patches of wetland provide high value resources in the heart of drier areas and allow for intensive production of rice and vegetables. Around major settlements and within reach of trunk roads, farmers have developed high density systems for crop production to sell in near and more distant markets.

This diversity of setting presents a major challenge for understanding change and the evolution of farming and socio-economic systems. The approach taken by the West Africa Long Term Prospective Study (WALTPS) and other such surveys has been to identify several large geographical regions within which there is somewhat greater homogeneity. Thus, the WALTPS took three zones: the Gulf of Guinea, Atlantic Sahel and Forest areas, and the landlocked Sahel. This choice of region combined issues of ecology, demographic pressure, and the role of economic poles or growth centres that draw

in materials and act as regional markets. Raynaut *et al*. (1997) draw on a range of case studies and materials from across the Sahelian region to identify a series of more micro-focused territories or geographical areas with certain characteristics, and focused around a well-defined local centre, as described below.

Box 4. Mapping the Sahel

The 14 geographical territories used by Raynaut *et al*. (1997) often have a particular identity, associated with an ancient pattern of land use surrounding a long-settled market town or administrative centre (such as around the Hausa cities of Maradi and Kano), a geographical coherence in terms of soils, farming practice and commercial crop development. These areas include: the Senegalese groundnut basin, the inner Niger Delta, the Senegalese river valley, the pioneer farming zones of southern Mali and south-west Burkina Faso, the Sahelian belt of agro-pastoral systems, the Casamance, the Ader massif, and extensive pastoral rangelands. While recognising the risks of an over-simple characterisation of these major types of situation, this approach does allow for a means to understand the different patterns of economic and social change which can be discerned between settings, and to highlight the importance of certain factors underlying trends and evolutions in different places. Raynaut *et al.* identify four main processes which help explain change: agro-ecological constraints, demography, market constraints and state interventions, and peasant strategies in response to the diverse opportunities available.

Similar approaches have been taken by other writers to identify areas which have a certain meaning in social, economic, political or ecological terms. Thus, for example, the Adja Plateau in southern Benin or the *terres de barre* have long symbolised a particular socio-economic pattern. Equally, writers have talked of the pioneer farming areas of central Benin, the densely populated upper east region of Ghana, the current cocoa frontier of western Côte d'Ivoire, or the abandoned cocoa lands of eastern Ghana. While to some extent this attempt to create a series of socio-geographic regions is an artificial device, it helps in understanding the different dynamics and pathways of change being followed, as well as the inter-connections between these areas. The massive inflows of migrant farmers into the south-west of Burkina Faso cannot be understood without knowing the difficult circumstances faced on the drought-prone Mossi Plateau further north, and by Burkinabé migrants in Côte d'Ivoire.

The evolution of rural areas is the result of a combination of several factors, as noted by Raynaut et al above, amongst which the strategies employed by peasant farmers themselves constitutes a central component. In cases such as the Sourou Valley, farmers have worked on their own initiative to seize new opportunities for irrigated agriculture in a dry zone.

Box 5. New opportunities seized in dryland Mali

The Sourou Valley in southern Mali was until recently a dryland forest area used for grazing (Woodhouse *et al*., 2000). As a result of the construction of a dam in 1988 downstream in Burkina Faso, the river level has risen and extended upstream which allows Malian cultivators to farm rice as well as their traditional millet crop. This has led to the rapid clearance of forest in the floodplain of the Sourou valley in a process without any specific government or other project intervention. An estimated 6,000 hectares have been brought under cultivation as a result. Increased competition for land has led to a substantial in-flow of people including herds in the dry season seeking grazing on the rice stubble. This new cropping activity is said to have greatly reduced food insecurity in a formerly very vulnerable area, with many households and individuals gaining rising incomes and levels of consumption, and also leading to falling rates of out-migration. Evidence of increasing differentiation between households is emerging with better-off households characterised by those with oxen and other cattle, large and well-flooded rice fields, and higher yields per hectare.

In more marginal regions, the joint effects of environmental change, demographic growth and structural adjustment have led to farming becoming less central to household livelihoods.

Box 6. Adapting to increased risk and withdrawal of services in Niger

The Zarma farmers of Fandou Beri, south-west Niger (Batterbury *et al*., 1996), practice an extensive form of agriculture, mainly producing millet for household consumption. Reduced fallows and changes in rainfall, combined with structural adjustment measures have led to increased reliance on seasonal migration and petty trading. Over the period 1952–92, the area of the village territory under cultivation increased from 11% to 23% . Good quality soils within the village territory have disappeared and yields have declined. However, little intensification of production has occurred. Fertilisers were used for a period in the 1980s, but after project support and subsidies were withdrawn, their use has dwindled. Zarma farmers do not routinely apply manure to their fields. Their limited livestock holdings are entrusted to Peul families and there is little integration between crops and livestock on Zarma farms. Cropping appears to have become less diverse as a result of changing environmental conditions, such that sorghum is no longer cultivated in significant quantities and cash crops such as cotton and groundnuts are rare. Short-cycle millet varieties have been adopted by farmers. Livestock ownership is becoming more attractive to Zarma farmers as a result of favourable animal prices, but there is little indication of any trend towards more integrated animal and crop production. Sales of crop surpluses are now rare compared to 1980s because of very low yields. Almost all young men leave the village by harvest time to earn cash. Women derive income from selling a variety of items, such as prepared food and bush sauce ingredients and from petty trading. Other home-based activities include mat making and raising animals.

In areas where cash crops used to be dominant, farmers are learning new ways of making ends meet (Faye *et al*., 2001). Senegal has witnessed a steep fall in groundnut production since the 1960s, when this crop was the major source of export earnings and farm income. Conventional explanations have blamed population growth, leading to a scarcity of land and the reduction of fallows. The latter was blamed for falling yields, and together with a fall in woodland, was taken as a sign of environment degradation. Only gradually was it realised that economic factors were also at work, particularly a price and marketing system that forced farmers in a risky environment to rely on credit for access to inputs, and which deprived them of much of the benefit of world prices.

Box 7. Diversifying away from agriculture in Senegal

In Diourbel Region, a new dynamic is observable, according to Faye *et al.* (2001), particularly since the change in agricultural and pricing policy which began in the 1980s. People in the area have always responded to different market opportunities for their produce and labour. Despite a decline in rainfall, farmers have maintained or raised yields per unit of rainfall, selectively using technologies introduced by the extension service. Rising meat prices have led to a massive swing to livestock production, using new fattening methods. Farm trees have been conserved, and crops diversified in favour of cowpeas and hibiscus. However, despite Senegal's heavy imports of rice, millet production has been limited to rural consumption needs, since there is no urban market for this crop.

Low agricultural incomes due to falling output prices and rising input prices have encouraged such substantial diversification into non-farm activities and urban out-migration that the proportion of land farmed may have declined despite population growth. The headquarters of the Mouride brotherhood, Touba, is the largest town in the Region, despite officially still being regarded as "rural". Touba, Dakar and overseas destinations have all attracted migrants, and many rural families have an urban branch. Remittances are not used for farm investments, but for consumption needs, and the little farm investment that takes place is livestock-orientated.

V. CENTRAL ELEMENTS OF CHANGE IN WEST AFRICAN AGRICULTURE: KEY DRIVERS AND CHALLENGES

5.1. Land use change

Patterns of land use have undergone enormous change in the last 30-40 years with a large and continuous expansion of cultivated area. This has led to clearance of much forested land in coastal and savannah regions, and a large number of farmers moving from high to less densely settled areas, seeking land. Thus, for example, it is estimated that in Ghana cropland occupied only 14.5% of national space in 1961 but 25.5% in 1995. Equally, in Côte d'Ivoire cropland increased from 8.5% to 23.5% over the same period. Similar rates of growth can be found in much of the region, though the paucity and quality of data remains a problem.

Such a large increase in cultivated area stems from various sources. Demographic growth is clearly an important driver with natural growth in the farm population of 2–3% per year… producing equivalent growth in farmed area, where land is still reasonably abundant. Migration flows into a particular area can generate very rapid rates of land use change, such as has happened in west and south-western Burkina Faso, where more than 80% of the land is farmed by people who have come from elsewhere, especially the drought-prone Mossi plateau, where land is scarce. Large-scale programmes to clear onchocerchiasis have helped open up broad areas for settlement that were formerly very lightly used. The widespread adoption of animal traction and, in some places, tractors has also led to very large increases in farmland. Many pastoral groups have adopted a much more settled pattern of life, given livestock losses during previous droughts and their increasing desire to establish firmer rights to land. National land tenure policy has also prompted greater land clearance in some areas where, for example, rights to land are conferred through its "*mise en valeur*".[12] This has encouraged strategic behaviour by some to cut and clear land in excess of what is actually needed, as a means of demonstrating use and consequent land rights.

Expansion of land for cultivation is likely to continue in those areas where resources are available, since this provides the best return on scarce supplies of labour. This massive investment of labour in clearing new land has often been portrayed in negative terms and described as "deforestation" and "land degradation". Yet, in many cases, it constitutes a landscape transformation bringing higher returns to the land user than semi-natural vegetation. As noted by Mortimore (2003 – *see Annexes 4a and 4b*) "such a landscape transformation represents an immense investment of effort in clearance… The value and achievements of private investments in African agrarian landscapes have been consistently underestimated by outsiders." This is not to deny that removal of the vegetation for farming will likely render the land more vulnerable to erosion, while reducing the availability of fallow land also cuts back on pasture and wild produce. As land becomes scarcer and hence more valuable, farmers are likely to make greater investment in ways of intensifying land use which should address some of these concerns. Such intensification will be more probable where agriculture prices bring a reasonable return, and land users have reasonably secure rights over the land they farm.

5.2. Environmental change

Environmentally, over the last 30 years, there have been major changes in patterns of rainfall, land cover and vegetation throughout West Africa. The dry Sahelian region has been most affected by rainfall changes, having experienced a decrease of 20–30% in expected rainfall between the periods 1931–60 and 1961–90 (Hulme, 1996). Not only has rainfall fallen substantially, but its distribution within the farming season has become more unpredictable. The major droughts of the 1970s and 80s prompted a substantial shift southwards by farmers and herders in search of better watered areas,

[12] "Being put to good use" – evidence for this usually being taken as making a physical investment, such as digging a well, constructing a building or soil conservation structures.

bringing major increases in population pressure in southern areas and the coastal region. It is unclear as yet what will be future trends in climate for the region as a whole (IPCC, 2001).

Despite such adverse climatic conditions, many farming communities have managed to cope through changing their practices, diversifying incomes, and adopting new crops and forms of land use that bring reasonable returns. The Mossi Plateau in central Burkina Faso demonstrates such adaptation and the important role of simple technical improvements in strengthening farmer response to climate change.

Box 8. Investing in soil conservation brings results in Burkina Faso

Central Plateau of Burkina Faso has undergone many changes over the last 20 years (Chris Reij, Vrije Universiteit, Amsterdam, pers. comm.). With 500 – 700 mm rainfall, it is characterised by marginal soils and high population densities (up to 100 people per km^2). In 1980 this was considered the most degraded region of Burkina Faso. The vegetation was rapidly disappearing, cereal yields were on average 400 – 500 kg per hectare, groundwater levels were falling rapidly and between 1975 and 1985 up to 25% of families left the villages to settle in higher potential regions. Improved methods of soil and water conservation (SWC), introduced over the last 15–20 years, have helped address some of these difficulties and led to major benefits, which include:

- Yields of sorghum and millet have increased substantially, and household food security has improved.
- The process of vegetation degradation has been reversed on cultivated fields treated with soil and water conservation (over 100,000 ha).
- Increased investment in livestock by both men and women, and more intensive animal management mean that more manure is available for improving soil fertility.
- More forage is available for livestock due to regeneration of vegetation.
- Many villages have seen rising water tables (+ 5 m or more) due to increased infiltration of rainfall and runoff.
- Rural to rural and rural to urban migration has decreased since the start of SWC programmes.
- Organisational capacity of villagers has improved.
- Local people reckon there has been a substantial reduction of rural poverty (up to 50%) between 1980 and 2002.
- The cumulative impact of SWC can also be found in agro-statistical data at provincial level. For instance, in Bam province the cultivated area did not increase as expected, but decreased slightly since 1989, while cereal yields increased by 50%.

Comparing villages with and without SWC projects, it is clear that the introduction of low-cost, risk-reducing and productivity-enhancing SWC has played a key role in triggering agricultural intensification and environmental improvement. Other factors have also played a role. For instance, the devaluation of the West African currency (the CFA franc) in early 1994 stimulated investment in livestock, and the improvement of major roads between Ouagadougou and two regional capitals reduced transaction costs and allowed traders from Côte d'Ivoire, Ghana and even Nigeria to send their lorries to Yatenga province to buy sesame, cowpea and vegetables.

One interesting farmer-innovator on the Mossi plateau is Ali Ouédraogo, (Reij and Waters-Bayer, 2001).now around 70 years old, who started to rehabilitate degraded land in 1983. Living on the edge of the small town of Gourcy, Zondoma Province, he was trained by the OXFAM PAF project to lay out and construct stone bunds. He has now treated many hectares of formerly barren land with a mix of bunds and planting pits, or zaï creating a much better environment for his sorghum crop. At the same time, he has encouraged regeneration of trees through planting indigenous tree seeds along the contour lines and preserving those seedlings that sprout in his field. In this way he can combine cereal cultivation with availability of perennial forage for his animals, the dung from which then returns to the soil via a large compost and manure pit he has established.

5.3. Land becoming scarcer and more valuable

The last 30 years have witnessed a very rapid growth of population, expanding urban centres and major migratory flows throughout the region, although the impact of such processes has been uneven. Having once seemed in ever abundant supply, in many areas good land is now becoming relatively scarce, due to a variety of factors. Such scarcity brings rising market values and greater difficulties for poorer groups seeking access to this resource.

Gaining secure access to land is of particular importance to poorer people, whose livelihoods depend on balancing a range of different activities, including negotiating access to a plot of land and being able to use the local commons. These rights are often not full property rights but various forms of secondary access. Yet such rights are increasingly subject to threat, as land values rise and new interests enter the land arena. There is growing competition for high productivity land, and where a reliable water supply will permit irrigation. The poor tend to be particularly vulnerable in areas undergoing rapid change, such as on the peri-urban fringe and in cash-crop producing zones. While in past decades, local land users were vulnerable to the state alienating their resources, the last few years have seen the emergence of private sector investors in much of West Africa, seeking land for farming.

The price of land is rising as it becomes scarcer. In Côte d'Ivoire, 30 years ago, incoming farmers could gain large areas of land in the forest zone in exchange for customary payments of kola and a chicken, and a small cash sum (Koné, 2002). Now, in many places it is impossible to access land except through major cash payments to land rights holders, either in terms of annual rents, or through mortgaging arrangements. Equally, in western Burkina Faso, arrangements for accessing land have shifted substantially from long-term loans, to shorter term rental, with payments either in cash or through provision of services (labour, ploughing) (Paré, 2001).

Box 9. Rapid changes in the 1980s and 90s in western Burkina Faso (Paré, 2001)

In the former pioneer farming area of western Burkina Faso, customary forms of access to land persisted until the late 1970s, including the time of mass settlement by Mossi migrants fleeing drought further north. In the 1980s, as a result of the large numbers of non-indigenous people in the region and rapid disappearance of land reserves under the combined impact of migration and cotton production, settlement systems gave way to loans on harsher conditions and rental. Conflicts within indigenous families and increasingly tense relations between migrants and hosts have recently led to a spate of land withdrawals from migrants and the replacement of open-ended loans with rental arrangements, which are renewable but at rising prices.

Box 10. Innovation in charging practices in southern Benin (Edja, 2001)

In southern Benin, around Dedomé, the development of rental is putting pressure on open-ended loans (although they are not being challenged). Lenders are less and less inclined to put up with excuses from borrowers who do not provide the expected gift of farm produce, claiming that the soil is poor and does not give a satisfactory yield. Since 1997, a new way of charging for land that was formerly lent has been tested by landowners. At the end of each season, the head of the landowning family sends a representative to check on the harvest reaped by the tenant. This person collects the payment due, which he sets in accordance with the level of output and which usually represents between one-eighth and one-fifth of the crop. Hitherto tenants were the only judges of the amount of the crop they gave to the landowners, but they now face a formula akin to sharecropping, with a fee in proportion to the harvest and a representative of the plot owner present at the harvest.

5.4. Structural adjustment, devaluation and liberalisation

From the 1980s onwards, all countries in the region have been through a process of structural adjustment, involving liberalisation of the economy, devaluation of the currency and a range of associated measures. The effects of such liberalisation have been mixed and difficult to evaluate, given partial adherence to structural adjustment policies in some cases, great diversity of settings, and lack

of good time series data (Kherallah *et al*., 2002). In general, where liberalisation helped remove tax and levies on agriculture, this brought benefits to the farming sector and provided a boost to the millions of smallholders making up this sector (Kherallah *et al*., 2002:102). One major consequence has been the near-total disappearance of state and parastatal marketing structures involved in marketing of agricultural produce. A few such organisations still exist (such as the CMDT in Mali) but, even where they have survived, their power and functions have been greatly slimmed down. The purpose of liberalisation has been in part to promote the free play of market forces, but also to relieve the state of a financial burden which was, in many cases, draining away central government resources. Liberalisation has certainly created space for the multiplication of economic actors (input suppliers, traders) in those places where their operations are profitable, but with the abandonment of pan-territorial pricing, poorer farmers in more marginal areas have faced difficulties since the services provided by a parastatal structure have not been replaced by the private sector. Elsewhere, the removal of tight production and marketing controls has helped open up many new possibilities to farmers, as can be seen by the rapid expansion in off-season fruit and vegetable production in Mali's Office du Niger (Dembélé *et al.,* 2001).

For export crops, such as cotton, groundnuts, and cocoa, the impact of withdrawal of agricultural subsidies and cheap fertiliser was offset for a period by a combination of better world market prices and gains associated with devaluation. Thus, for cotton production in Mali, the combination of higher producer prices due to devaluation and rising world market prices in the mid-1990s more than outweighed the extra costs of buying the inputs needed to guarantee a good harvest. However, current world market prices are at their lowest level for thirty years, due to over-production at global levels, fuelled by agricultural subsidies in the US and EU. In the case of livestock, the higher returns from animal sales post-devaluation much more than compensated producers for any input costs.

However, liberalisation also brought multiple and damaging impacts where it overturned the established systems for input supply, marketing, and provision of credit. A recent assessment of the effect of such policies in Côte d'Ivoire clearly points out their contribution to the current political and economic crisis, by accelerating the tearing up of the economic and social fabric which had provided the basis for some level of political consensus between competing groups (Losch *et al.,* 2003). One consequence has been the rapid descent of much of the population into poverty, with income per head falling by half, further aggravating the social and ethnic tensions between groups. In the case of Côte d'Ivoire, it is estimated that the number of those in poverty tripled from 10 to 31% of the population over the period 1987–2002. Measures to liberalise the economy were particularly damaging because of their simplicity, and dogmatic quality, based on short-term perspectives and lack of proper preparation and supportive measures. Thus, the old state monopolies were merely replaced by private oligopolies, very often foreign owned, which eliminated the role of and possibilities for Ivorian enterprise. The downturn in world market prices for cocoa and coffee further damaged incomes and prospects.

5.5. Increased linkages into markets: the role of urban centres

Between 1960 and 1990, the population of West Africa grew at an annual rate of 2.7%. In 1990, the region's total population was roughly 215 million and, by 2020, it is expected to double, rising to 430 million. Although remaining relatively under-populated, compared to many other parts of the world, this continued population growth will bring about a significant rise in the overall population:land ratio.

Urbanisation has, in the last few decades, been rapid. In 1960, the urban population of West Africa represented only 13% of the total population; by 1990, towns and cities accounted for 40% of the total population. Although the pace of urbanisation is expected to slow down, by 2020 it is predicted that 60% or more of the region's population will be living in urban areas. In 1990, there were 90 cities with populations greater than 100,000; by 2020, there are likely to be 300 such cities. Over the next twenty five years, then, West Africa will experience a trebling of its urban population.

Since the beginning of the colonial period, the geographical distribution of West Africa's population has changed considerably. In broad terms, coastal and more southerly populations have grown faster than those in the Sahelian interior, since greater economic opportunities along the coast have resulted in migration from further north. Between 1930 and 1990, for example, the population of Burkina Faso grew threefold, from 2.8 to 8.7 million; that of Côte d'Ivoire, by contrast, grew eightfold, from 1.4 to 11.4 million, with in-migration making a significant contribution to population growth.

Urban and peri-urban areas in West Africa have long exercised a very powerful influence over the neighbouring hinterlands, spreading economic development through market relations, and political and administrative control through the imposition of taxation and military levies.

Box 11. Kano: a long established city state in northern Nigeria

The Kano Close Settled Zone is well-known for the long-established system of farming which it has supported for several centuries (Mortimore and Adams, 1999). It provides "an example of a farming system which has reached the point in the intensification process at which all land is under cultivation, all palatable crop residues are used as fodder, and trees are conserved" (Harris, 1996: 13). Soil fertility is maintained by labour-intensive management involving the close integration of livestock and crops. Long before inorganic fertilisers became available, and even now for those who cannot afford them, animal manure with bedding and compound sweepings are vital components in maintaining the physical and chemical properties of the soil. Hence, every household aspires to own as many sheep and goats as possible. The crops are weeded very regularly and the plant biomass fed to animals. Trees are browsed and their fodder used as forage. Fuel wood is harvested from dead wood and cut branches. All trees are privately owned so they are protected for the future. The resulting landscape is one of 'farmed parkland', similar to that found in the forest transition zone of Guinea (Fairhead and Leach, 1996) and in the long established areas to the south of Ségou in Mali. However, even in the lower density, drier landscapes further to the north and east of Kano city, the landscape is one created and maintained by farmers and their livestock to generate a sustainable set of crops, forage and bush materials.

Yet this beneficial impact from improved access to markets is matched by a growing level of land insecurity, as can be seen from the examples below.

Box 12. Uncertain land rights for peri-urban farmers in Ghana and Nigeria

Change and development in the peri-urban region of Kumasi (based on Brook and Davila, 2000) have followed a pattern of intensification and increasing returns over the last 30–40 years. While in the 1960s, forest cover and fertile soils were still supporting cocoa production in the 10–20 km belt around the city, by the 1970s production had shifted to cassava, maize and okra, with a rapid rise in production for the city's market in the 1980s and 90s. Cassava has now become the most important crop, associated with tomatoes and other vegetables. Declining soil fertility and farm size have brought about increased use of fertilisers and agro-chemicals and growing interest amongst younger farmers to engage in farm production. Often migrants renting land, they constitute a more entrepreneurial class of younger male farmers. The rapid growth in Kumasi is provoking considerable uncertainty amongst farmers close to the city who see much cultivated land being converted to building plots. As a consequence many land users feel increasingly insecure regarding their usufruct rights, and vulnerable to finding themselves landless, the chief selling the land over their hands for building plots and paying the land user no compensation. As a result, there is a growing reluctance amongst farmers to invest in improving soil fertility and applying other agricultural inputs since they risk losing all benefits from this. By contrast in the more distant areas some 20km or more from Kumasi, farmers are intensifying production with greater assurance that they will benefit from such investments.

…/…

Even those with land feel the need to pursue more promising livelihood options, given the threats to land holdings. Kasanga (1998) notes that many people consider urbanisation to have generated rising poverty and insecurity (52%) with only 2% considering urbanisation to have brought increased incomes. The rising cost of living from increased rents has pushed some people into more distant areas, with many people no longer being able to gain access to land through traditional channels, given its appropriation and conversion to house-building.

In peri-urban Port Harcourt, insecure and uncertain rights over land provide a similar disincentive for land users to invest in higher levels of productivity (Anikpo, 2000). Despite a very large urban market on their doorstep, many land users are part-time farmers, seeking to supplement their incomes with a little extra food but hoping to find a paid job in the city rather than concentrating on market gardening, given the risks associated with land.

Urban growth and rising demand for food, fibre and other farm products provide a valuable motor for agricultural intensification, and transform property rights. The key questions concern how best to manage the scramble for land rights in peri-urban areas where land values are rapidly escalating, to ensure that land users retain a strong incentive further to invest in the productivity of their plots and feel assured of their longer term claims.

5.6. Social change

In social terms, much of West African rural society is experiencing the fragmentation of large domestic groups into smaller family units with principles of long-term reciprocity being replaced by shorter term calculation of economic advantage (Amanor, 1999). This means that elders can no longer assume the free provision of labour services from their sons, since the latter have equally had to abandon their expectations of gaining land from their fathers, due to land shortages and sales of land outside the lineage (Chauveau, 1997; Paré, 2001). Equally, relations between women and men have undergone significant change, with women increasingly demanding that they be paid for work done for their husband's estate.

Box 13. Changing rights and expectations in the family

There have been important shifts in social expectations and domestic organisation in eastern Ghana, which have led to the development of monetised relations between family members. Formerly, it was expected that young men would work for nothing on the family's land, with the prospect of longer term returns in the form of help with marriage costs, and increased access to land and family wealth over time. However, this implicit contract between elders and youth has disintegrated in many areas, due to both sides feeling that their expectations regarding the other had not been properly fulfilled. As a result, youths have withdrawn their labour services from family activities, and prefer to work for cash on a neighbour's farm (Amanor, 2001).

Such transformations to the social structures and institutions within which people plan their lives are widespread. As noted by Guyer (1997) for south-west Nigeria:

the "household" of man, wife (or wives) and dependent children is even less of a production in 1988 than it was in 1968. Young people work for wages, even from their senior kin. Wives farm on their own account, and husbands hardly intervene in any way with their wives' farms… the work that kinsmen used to carry out for each other under the rubric of long-term cash reciprocity, such as porterage by wives in return for ceremonial contributions and labour by juniors in return for bridewealth, have been obviated by changes in social life and translated into much more short-run forms. (Guyer, 1997: 206)

These changes to social structures, expectations, values and domestic institutions will have major consequences for patterns of economic development, especially in the agricultural sector, protection of more vulnerable groups from diverse sources of risk, and levels of poverty. The shift from collective to individual forms of activity and wealth creation, and breakdown of large into small domestic units seem inevitable results from the process of social modernisation. Government rarely, if ever,

explicitly considers the potential damage to social well-being and loss of social capital which these changes bring with them.

5.7. Diversification of agriculture and livelihoods

Throughout West Africa rural incomes have become increasingly diverse, with farming accounting in many cases for only 30–40% of total revenue (cash and kind combined). Diversifying to protect against risk has long been part of many households' strategies for survival and growth, whether it be by growing a range of different crops, raising different species of livestock, and investing in a broad set of assets and social networks. The last 30–40 years have witnessed substantial shifts in patterns of consumption and potential markets. While rising incomes and urban development have provided new market opportunities for certain skills, some traditional crafts have been forced out of business, with the arrival of cheaper substitutes. Thus, today, rural women rarely wear home-spun cotton cloth, given the wide range of cheap, machine-woven cotton fabrics now available. Equally, the makers of clay pots, and menders of calabash bowls find far less demand for their skills now, given the availability of light and strong plastic and galvanised iron vessels.

Adverse circumstances have forced some people to develop new sources of revenue, as when herders have lost so many animals they can no longer maintain a pastoral existence and must start to farm. At the same time, some people have turned to find a new livelihood in town due to a collapse in their former way of making a living. But in many cases, livelihood diversification has been a positive, conscious choice, with people seeking out new opportunities that provide a better return on their effort. Examples include the large number of farmers from Burkina Faso and Mali seeking land to farm in Côte d'Ivoire, and the widespread take up of fishing as an additional source of activity throughout the region (Morand *et al.*, forthcoming). Equally, while some traditional crafts have suffered a loss of markets, others continue to thrive, while the increase in consumer goods and equipment has generated many additional sources of activity (such as bicycle and mobylette repairs, sowing machines, building work in town, loading and unloading lorries, and so on). Migration, whether to town or to another farming area, is often portrayed as a response to desperation. But this paints too negative a picture of what, for many of those involved, constitutes an opening up of many new opportunities, bringing a significant cash income.

Patterns of diversification tend to be associated with location and the kind of household (size, wealth, etc.). Wiggins (2000) argues that there is likely to be more diversification taking place in higher potential, more ecologically varied farming areas, as the local economy provides a greater range of options for people to pursue *in situ*. However, there is also strong evidence for households in low rainfall, higher risk settings to develop more diverse income sources, though this frequently involves migration away from home (Reardon, 1997). Larger and wealthier households also tend to diversify more successfully than smaller, poorer households, the former being able to take risks and having both the labour available and the assets to invest in new activities.

As in other fields, it is often the early innovator who faces both the highest risks but also is able to reap the higher rewards. Diversification of income and assets in the form of a broad household portfolio provides greater protection against the multiple hazards faced by farm households everywhere, as shown by recent thinking on rural livelihoods (Ellis, 2001; Hussein and Nelson 1998; Scoones, 1998). Maintaining and expanding the large domestic unit is an integral component in such a diversification strategy.

Box 14. Patterns of diversification shift over time: Mali

In Dalonguebougou, central Mali (Toulmin, 1992; Brock and Coulibaly, 1999), eight broad categories of livelihood diversification were being followed by different groups, including trade (at both individual and household level), agricultural wage labour, small stock rearing, cotton weaving and spinning, granary making, fortune-telling, and a range of other skills (carpenter, tailor, bicycle mechanic). Successful farming households have pursued a series of investments bringing good returns over the last 50 years, as can be seen below.

Date/period	Form taken by diversification
1950s/60s	Expansion of groundnut cultivation, first by hand and then through the purchase of ox-drawn ploughs
1970s	Purchase of cattle herds, particularly during drought years, when grain and livestock prices favourable
1980s	Well-digging, dung-water contracts to fertilise much expanded village fields, trading develops
mid-1990s	Enlargement of bush fields using plough teams, expansion of trade into shop-keeping

5.8. Agro-industry and "nouveaux acteurs"

While the vast majority of West African agriculture and land remain in the hands of smallholders, there has been a significant interest in farming from the industrial sector, though this has ebbed and flowed depending on circumstances. Thus, in Nigeria in the 1970s and 80s government aimed to encourage large-scale, private investment in agriculture, and backed up such an approach by changes to land tenure laws. In more recent times, a number of West African governments have opted for policies in favour of the "modernisation of agriculture". One central element has been to promote more secure forms of land tenure to allow for privately owned land as a means to encourage long-term investment in land improvement. Another element has comprised positive measures to encourage the establishment of agricultural entrepreneurs in rural areas, by ensuring access to land and preferential access to key inputs. Thus, for example, Senegal has just approved a project Sénégal Agricole which plans to put in place 25 large-scale agricultural schemes and half a dozen agropoles. Together these are hoped to provide an additional 30,000 hectares of irrigated land over the next five years (Walfadjri, 2003).

Some governments espouse policies aimed at "agricultural modernisation" which assert the need to do away with many small-scale peasant farms, on the grounds that they can no longer cope with competition and technological change (*Observatoire Paalga*, 2001). Others, such as Senegal, explicitly commit themselves to support for family farms, while seeking to complement their presence with large-scale agro-industrial developments (Govt. of Senegal, 2003). However, in the West African context, there is no evidence for the superiority of large-scale commercial agriculture, which has performed very poorly over recent decades (Belières *et al.*, 2002). The global evidence on farm size and productivity also shows small farms generate higher yields than large-scale enterprises.

Box 15. Farm size and productivity

Are small farms more or less productive than large farms? A substantial body of research shows that productivity, taken as output per hectare, is higher on small than large farms (Deininger and Squire, 1998; Netting, 1993). The data stem mainly from Asia and Latin America, with little work done on farm size issues in sub-Saharan Africa. This inverse relationship between farm size and productivity is the result of several factors. Small farms rely much more on family labour which tends to require much less supervision than hired workers. Given differences in land area available, it is rational for small farmers to maximise returns to their scare factor, land.

…/…

A recent survey of "new agriculturalists" in Burkina Faso suggests that the large farms being established have low yields and poor performance in comparison with neighbouring peasant farms. However, many of these new farms are very recent in their setting up and may improve productivity over the longer term (Ouédraogo, 2003).

Work amongst West African farmers suggests that there may be some economies of scale in farming such that farm households with 10–20 people and one or two plough teams available do better than a nuclear family, containing a single couple and young children, reliant on hand tools (Belières *et al.*, 2002; Toulmin, 1992). However, moving beyond this size does not appear to bring additional benefits but rather is associated with lower returns and greater vulnerability to market price variability, access to cheap credit etc.

Current debate regarding the future of agriculture in West Africa has focused on the choice between family farming and agribusiness. The first is often presented as backward, inefficient and subsistence-oriented, while the second is attributed the virtues of being modern and forward-looking, efficient and market-oriented. Yet, in practice, such distinctions are false, with levels of performance largely the product of external conditions and incentives. Large-scale commercial farming is itself highly differentiated, with a range of strategies being pursued. Some large farmers are seriously engaged in running a profitable business, while for others, the receipt of preferential inputs and access to credit may be a prime motive. Equally, some "large farmers" are more interested in acquiring claims over land for speculative, rather than productive purposes. Many examples show that these farms have suffered damaging reversals when government preferences are withdrawn, and access to inputs and foreign exchange becomes harder. By contrast, small-scale family farms maintain a degree of autonomy which allows then to cope with adverse circumstances, while family labour enables a rapid and flexible response to emerging economic opportunities. There are also distinct differences within the family farm sector between large, adaptable farm households, and small, highly vulnerable groups with few assets or capacities to cope with change, as discussed earlier in Section 3.2.

Amanor (1999) and Guyer (1997) describe how during the 1970s, the governments of Ghana and Nigeria tried to encourage foreign firms to invest in agriculture.

Box 16. Private sector investment in large farms – a dismal story

Many transnational companies with operations in Ghana had accumulated profits from their activities but were unable to transfer them abroad due to shortages of foreign exchange. It was hoped that their investment in joint private-state farming enterprises would increase agro-industrial activity. The government guaranteed access to land, social infrastructure and tax exemptions for equipment and other inputs. However, only 12 companies were in fact willing to take up these schemes, with four of these still in business in the late 1980s, failures having been due to litigation relating to land, and poor access to foreign exchange for imports of inputs. Nevertheless, the scale of land appropriation for some of these schemes was very considerable, with the Benso Oil Palm Plantation taking 27 square miles of land, displacing 3,000 peasant farmers. The expansion of oil palm production and expropriation of land for the Ghana Oil Palm Development Corporation (GOPDC) has resulted in a scarcity of land for many farmers and for food production. With few opportunities in agriculture, many youths are moving into informal sectors that are being criminalised by the state, such as chainsaw timber production and small-scale mining, and engaging in activities which involve pilfering, such as night-time harvesting from the GOPDC oil palm plantations. These activities reflect the recognition amongst rural dwellers that state policies are not in their interests or administered on their behalf.

…/…

The Nigeria indigenisation decrees passed in the 1970s obliged foreign firms to reinvest profits in the Nigerian economy. The Land Use Act of 1978 was also designed as a means to free up land from customary claims for allocation to modern agribusiness. Land was nationalised and long-term leases put into place, with customary owners ceding rights for up to 99 years. Numerous interests started looking for land: the boy scouts of Nigeria, General Obasanjo, the United Africa Company (UAC), civil servants, various churches, etc. Structural adjustment in 1985 brought a ban on imports of wheat, barley and other ingredients for brewing and animal feed, so companies sought regular sources of supply through developing their own farms. For example, UAC and Leventis set up their own farming ventures for sourcing needed inputs. The Texaco farm in Ogun State covered a total of 3,886 acres, having been set up in 1975 as a means of using oil profits. However, it closed in 1987, due to economic difficulties and financial irregularities. It focused on cassava production and also provided a site for experimentation with new varieties generated by the neighbouring IITA research centre. A factory was built on-site to process cassava into flour, using mainly women workers. But it was very difficult to run the business at a profit, due to strong competition for wage labour from local farmers, and volatile prices for the processed gari. The devaluation of the currency took a further turn in 1986, making imported inputs prohibitively expensive. Vertical integration of these farms means they operate as enclaves within rural areas and have few linkages to the local economy, apart from employing a certain number of workers, and land acquisition.

Such examples tend to confirm the evidence presented by Belières *et al.* (2002) regarding the difficulties faced by large commercial farm enterprises in Senegal. Here, considerable areas of land were allocated to applicants seeking big holdings, who relied on access to cheap credit to develop and work the land. The devaluation of 1994 combined with market liberalisation and restrictions on credit led to the collapse of many commercial farms, unable to compete with smallholders and imports of cheap rice. By contrast, family farms have been able to adapt and intensify, using cheap labour in preference to costly credit and machinery.

5.9. Producer organisations and institutional change

For a decade or more, throughout West Africa, a range of producer organisations (POs) have established themselves and strengthened their position, at local, national and sub-regional levels. These organisations are in part the result of government withdrawal from important areas of economic activity, including agricultural input supply and marketing. They also have emerged in a context of greater political liberalisation, and now represent a political force to which governments must listen. This became clear from the strike by Mali's cotton farmers in the 2001 season, due to low prices and continued waste and corruption within the CMDT. The strike cut output by half, with many cotton farmers switching to maize and other cash crops for that season.

Producer organisations cover a wide range of activities, from management of a common woodland or pasture resource, water user associations, collection and sale of a particular crop, as well as providing access to fertiliser, seed and credit (Bosc *et al*., 2001). Grouping together through collective action enables producers to take advantage of economies of scale, as well as making their voices heard in government policy and decision-making. Additionally, producers hope to increase their negotiating power with companies buying their crop, all the more necessary as globalisation is bringing an increased concentration and integration of agrobusiness throughout the world. In some cases, producer organisations have also provided a valuable bridging function between farmers and sources of technical expertise, such as research and extension structures. Foreign aid funds have often been instrumental in strengthening the role that POs can play, with associated risks of the leadership becoming increasingly distant from the interests and needs of the membership.

Examples of producer organisations operating at national level include the Comité National de Concertation des Ruraux (CNCR) in Senegal, the Fédération des Unions des Producteurs (FUPRO) in Benin, and the Syndicat des Exploitants Agricoles à l'Office du Niger (SEXAGON) in Mali (GRAF/GRET/IIED, 2003). The CNCR provides an interesting case, which brings together a series of PO federations in Senegal, and has become a central actor in dialogue between government, donors,

and producers on agricultural strategy and related issues, such as land tenure. Such POs have the advantage of providing a channel to make the case for greater support to agriculture in general, as well as to take account of the particular constraints faced by smallholders. Policy and decision-making in government tend to follow both formal and informal procedures. Smallholders have less easy access to informal mechanisms that operate via old-boy networks, and lobbying through high-level political contacts, which are usually the preserve of powerful economic actors, such as large commercial farmers and agribusiness. Thus, POs need to make best use of official channels and opportunities to give voice to the needs of less powerful actors.

At sub-regional level, there has been increased interest in generating pressure on governments and regional institutions to ensure producer interests are better taken into account in negotiation processes relating to the WTO, CAP reform, and Cotonou negotiations. Examples include the Réseau des Organisations Paysannes de l'Afrique de l'Ouest (ROPPA), the Association Cotonnière Africaine and the Union of Chambers of Agriculture for West Africa. ROPPA and its members have been particularly vocal in support of family farming, and opposed to the agribusiness model being promoted by some as the means to "modernise" agriculture. "This vision (in support of family farming) has been inspired by a global perception of the role of agriculture in society, not only for producing food and fibre but also performing many other economic, social and environmental functions" (Belières *et al.*, 2002). Thus, the argument being made by ROPPA and others supports broader debates regarding the "multi-functionality" of agriculture and consequent need to avoid a purely economic or market-based approach.

Box 17. Regional Network of Producer Organisations – ROPPA

The ROPPA was established in 2000 as a West African network, with members initially in Benin, Burkina Faso, Côte d'Ivoire, The Gambia, Mali, Niger, Senegal and Togo. The main aim has been to strengthen capacity building within member organisations by adopting a regional approach.[13] Key objectives include to:

- Promote and strengthen the values of competitive and sustainable family farming;
- Collect and share information on successful POs;
- Strengthen skills within POs to negotiate and deal with policy-making;
- Promote solidarity amongst POs;
- Ensure effective representation of PO interests at regional levels.

Current activities include establishing a Carte d'Identité Rurale (CIR), lobbying for family farms to be central to agricultural policy making at national and regional level, and building links with global peasant movements to develop joint advocacy within world trade and other negotiation processes.

5.10. Agricultural policy and modernisation of agriculture

Agricultural policy aims to address a broad range of objectives, such as increasing agricultural productivity and contributing to food security, reducing poverty and improving the livelihoods of rural producers, increasing capacity to compete with imported agricultural products, diversifying agricultural exports, managing the sustainable use of natural resources – soils, water, forests, grazing – on which agriculture relies, as well as ensuring a balanced pattern of development within the overall territory of the country (Govt. of Senegal, 2003). Much recent debate on agricultural strategy within a number of West African countries has emphasised the need for "modernisation", a term which has been interpreted in diverse ways, depending on context, but which tends to translate into:

[13] A range of capacity building initiatives are under way to strengthen the skills of PO leaders, such as the African Farmers' Academy and the PADCLA programme of UPA-DI (see Annex 3 for details).

- Establishment of land tenure legislation to support private property, through titling of land, and associated measures to increase the volume and security of transactions in land;
- Increase in the size of agricultural land holdings through the allocation of concessions to large-scale commercial farmers, and associated preferential access to inputs, credit, equipment, etc.;
- Decrease in the number of very small farm holdings and associated population, as the modernisation process develops.

Questions of agricultural policy and strategy are currently being debated at three different levels: the place of agriculture within the context of national Poverty Reduction Strategy Papers (PRSPs); the common agricultural policy being developed for the UEMOA sub-region; and the New Programme for Africa's Development (NEPAD) framework, being discussed by the G8 and other global fora. Together these different levels of strategic thinking should lead to a clearer focus on the choices faced at national and global levels, and the extent to which there are major trade-offs between:

- Reducing poverty and improving economic opportunities for West African farmers versus continuing the funding of enormous farm subsidies in OECD member states (currently at $350b per year);
- Small-scale family farms and large-scale commercial agriculture;
- Securing the rights of customary land users and providing private title to land for inward investors.

In some cases, these trade-offs may be less clear-cut, with possibilities of "win-win" situations, and complementarities between say, promotion of agribusiness and creation of widespread benefits to local communities. In other cases, these trade-offs involve clear political choices regarding the distribution of benefits to different groups, both at national and global levels.

VI. AGRICULTURAL PRODUCTION: YIELDS AND HARVESTS

6.1. Food crops

The table below presents data for six West African countries on per capita production of major food crops for the period 1961–63 to 1997–99, derived from FAO statistics (Mortimore, 2003 – *see Annexes 4a and 4b*). The figures demonstrate the diversity between countries' experience, with the case of Senegal and Niger sharing a marked negative trend for major cereals (rice, millet, maize, sorghum) over the period, but much more positive trends in cereal production for Ghana, Nigeria, Mali and Côte d'Ivoire. For Ghana and Nigeria, there was a deep trough in farm production in the early 1980s and growing dependence on imported food. Subsequent policy shifts in favour of domestic agriculture helped provide greater incentives to farmers and a recovery in production levels.

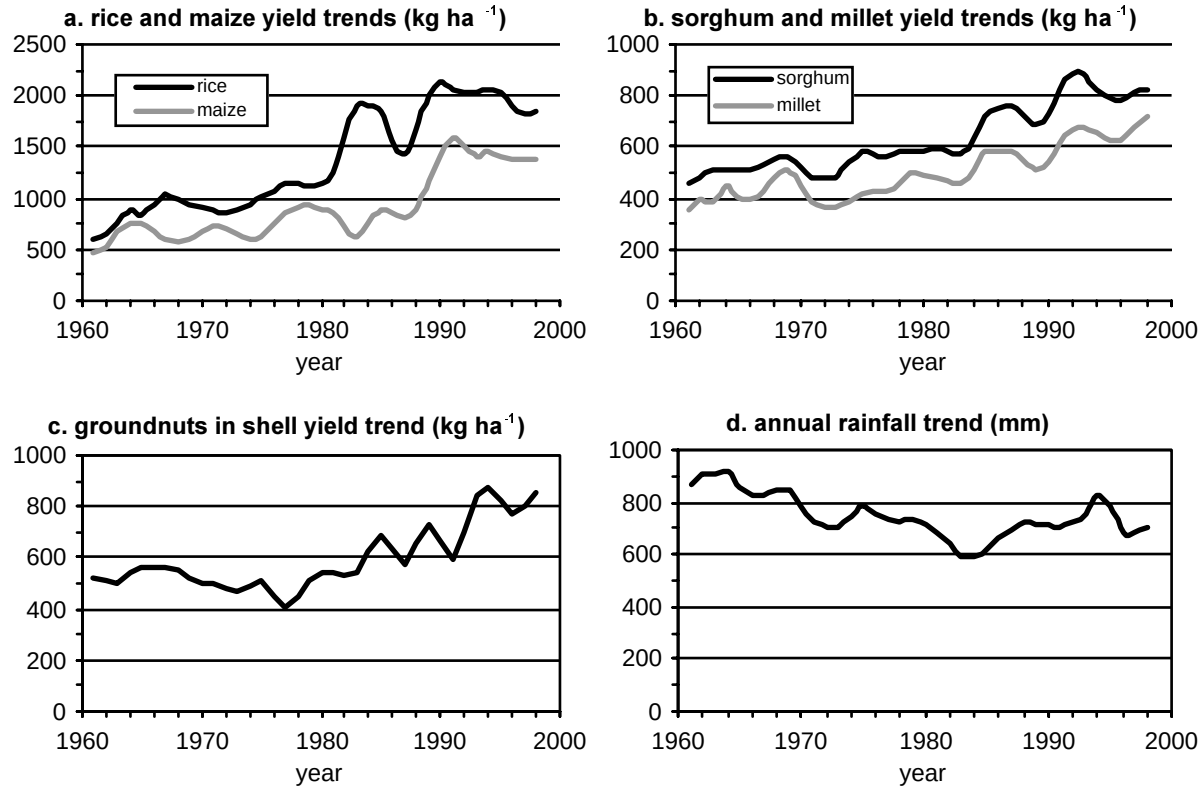
In the case of Niger, lying almost entirely in the Sahelian and Saharan zone, the agriculture sector is particularly vulnerable to drought. As a consequence, cereal production has been badly hit by the rainfall failures of 1973–5 and 1983–4. Nevertheless, evidence from Maradi Department in southern Niger shows increasing output per capita and rising yields. Growth in cowpea production was strongly positive, due in large part to high levels of demand from neighbouring Nigeria. In Mali, all four cereals recovered strongly from a trough in 1981, this upward trend continuing for rice and maize, while faltering for millet and sorghum. In Côte d'Ivoire, per capita production of rice, maize, and millet rose by 30% over the period, although root and forest crop production declined by a similar percentage.

Table 2: Change in per capita production of major food crops, 1961–63 to 1997–99 (%)

Country	Cereal crops	Root and forest crops	Change
Ghana	rice, maize, millet, sorghum		**+ 59.8**
		cassava, yams, plantains	**+ 66.3**
Nigeria	rice, maize, millet, sorghum		**- 1.2**
		cassava, yams, plantains	**+ 76.3**
Mali	rice, maize, millet, sorghum		**- 2.6**
Niger	rice, millet		**- 24.2**
	cowpeas		**+131.2**
Côte d'Ivoire	rice, maize, millet		**+ 30.5**
		cassava, yams, bananas, plantains	**- 28.5**
Senegal	rice, maize, millet, sorghum		**- 41.2**
		cowpeas	**+ 33.3**

Comparable evidence is provided by a recent study of Burkina Faso (Mazzucato and Neimeijer, 2000). Here, taking data from FAO for the period 1961–1998, they show that yields of the most important crops have considerably increased over the last 40 years, despite a 20% decline in rainfall. Rice and maize yields increased threefold while those for sorghum, millet and groundnuts doubled (Mazzucato *et al.*, 2001). They go on to argue that "while increased mechanisation, migration and fertiliser use have contributed to some degree to the increase in rice and maize yields, those are unlikely to be significant factors in the case of the other crops…. Farmers seem to have been able to even increase output without relying on external inputs to replenish soil fertility" (Mazzucato e*t al*., 2001: 6).

Fig. 1: Yield trends for Burkina Faso (1961–1998)



Source: Mazzucato and Neimeijer (2000)

Thus the overall trends for food crop production show a remarkable degree of stability for some crops, and increases for others despite often adverse climate, economic and policy environments. Such performance is particularly striking when combined with data on export crops, which show, in many cases, very large rates of growth (as discussed in Section 6.4 below).

6.2. Export crops

The table below shows the substantial decline in export crop prices for major commodities produced by West African agriculture, and sets the broader context for discussion of farm performance.

Table 3: Change in primary commodity world prices, 1970–98 (%)

	Period			
Commodity	1970–80	1980–90	1990–98	1980–98
Cotton	13	-36	-24	-51
Cocoa	35	-65	27	-55
Coffee	5	-74	48	-61
Palm oil	-22	-64	123	-20

Source: Kherallah et al. (2002)

Cotton

Cotton has been a major export commodity from West Africa for the last 50 years. Current estimates show that 6 million farming households rely on cotton production in West Africa, involving perhaps as many as 18–20 million people. Cotton is produced entirely by smallholders, on farms varying from 3–20 ha in size. West Africa produces an estimated 2 million tons of seed cotton, 80% of which stems from the French-speaking countries, amongst which the principal producers are Mali, Côte d'Ivoire, Benin and Burkina Faso. Growth in output has been substantial over the last decade, with a doubling in area cultivated between 1978/9 and 1988/9 and a further doubling to 1998/9 (Ton, 2001).

Table 4 compares the performance of large and smallholders growing cotton in Mali, and shows that returns per hectare from cotton production are highest for those in class with a single pair of oxen. There appear to be no economies of scale once a farm household moves from manual labour to use of a single plough team. There has been increasing investment in tractors by some of the largest cotton producers, with tractors serving both to plough their own land and that of others, as well as to transport goods, thresh grain, etc. However, while tractors allow for a substantial area to be farmed, the returns per hectare are lower than for smaller farms, as a result perhaps of less effective weeding, and higher input costs.

Table 4: Farm performance by size and levels of mechanisation, CMDT zone, Mali

	One tractor	At least 2 pairs of oxen	One pair of oxen	Manual labour
No. of cases studied	25	15	15	17
No. of persons/farm	31.2	15.3	9.9	7.9
Total land area (ha)	34.8	15.9	9.2	3.8
Land area/person (are)	112	104	93	48
Total labour days/person	88	89	77	40
Total labour days/ha	79	86	83	84
Monetary income from agriculture in CFAF	1.018.000	436.000	312.000	71.000
Mon. inc. from agriculture: CFAF/ha	29.000	27.000	34.000	19.000
Mon. inc. from agriculture: CFAF/person	33.000	29.000	32.000	9.000
Mon. inc. from ag.: CFAF/day's labour	372	320	407	223

Data: 1990/91 and 1991/92 crop years, 12 farms per village (Faure, 1994)

Ton (2001) argues that expansion of cotton production in West Africa has accelerated differentiation within the agricultural sector, households equipped with animal traction being able to do well and expand production while the 30% or so of households with only manual tools have been unable to participate effectively in this source of income. Being reliant on access to plough equipment once everyone else's fields have been prepared means that crops are sown late, with adverse impacts on yield. Similarly, critics of Mali's CMDT argue that existing policies for agricultural intensification have increased the technical options available to middling and wealthier households but lack a poverty focus, providing little opportunity for those with limited capacity to invest. Given the intensive inputs required for cotton, in labour, credit, inputs and management, cotton may well not be the most appropriate for small, poor farmers to adopt. Analysis of income sources for farm households in the village of Zaradougou, southern Mali identified cotton as the major source of income for households in the wealthier and middling income classes, while several households in the poorest group did not cultivate cotton at all, in several cases having fallen into debt with the CMDT (Brock and Coulibaly, 1999). Women rarely have direct access to credit, inputs and extension advice from the CMDT.

Cotton farmers are strongly affected by world market prices for cotton. World cotton prices are currently at their lowest levels for thirty years, at half the long-term average. This is the result of a large global harvest, generated in part by high subsidies paid to farmers in rich countries, combined with low levels of demand (see later section for more detail). Farmers in the US and EU are protected from this price slump by high levels of producer support in the form of subsidies. By contrast, major losses in incomes and revenues have been felt by many developing country farmers. West African producers have been badly hit, since there is no system of subsidies to protect farmers from such an adverse shift in world market prices. Given that all cotton production relies on smallholders, one can reasonably assume that they have all been damaged to some extent by the recent fall in world market prices.

Cocoa

Cocoa production in West Africa is mainly the business of Côte d'Ivoire and Ghana, with minor levels produced by Nigeria, and Cameroon. New sources of global supply have been entering the market, from Latin America and East Asia (especially Vietnam, Indonesia). Hence West African farmers no longer have such a dominant role in global supply of cocoa. The current conflict in Côte d'Ivoire, which in 2000 provided more than 40% of world market supply, has provoked a substantial hike in prices, of considerable benefit to neighbouring Ghana, as well as more distant producers. Cocoa is produced principally by smallholders in West Africa. There are a few large-scale plantations in both Ghana and Côte d'Ivoire, but overall they represent a small percentage of output and cropped area. It is estimated for example that there are one million smallholdings producing cocoa in Côte d'Ivoire and 800,000 in Ghana. Thus, improved trade opportunities and good prices for cocoa have the potential to benefit a large number of small farmers in the region.

Cocoa production requires a very labour-intensive process to clear land, plant and maintain cocoa trees and harvest the crop, and has always relied heavily on access to labour, both family and hired. In Ghana and Côte d'Ivoire much of this labour came from other parts of the country and neighbouring states. Those with labour to offer could exchange their work for access to land through various sharecropping arrangements, thereby enabling migrants to acquire their own farms. Over the last 40–50 years such opportunities drew in several million Sahelians from Burkina Faso and Mali to Côte d'Ivoire, seeking to acquire land holdings of their own. While land reserves were still substantial and cocoa prices good, this policy of expansion based on in-migration could be maintained. But, with the downturn of the 1980s, and perception that land reserves were being exhausted, conflicts between local people and incomers have grown, with rising levels of contest regarding "rights" and claims to land. In Ghana, the Aliens Act of 1969 brought the expulsion of hundreds of thousands of Sahelians who had come to make a living from cocoa, many of whom subsequently moved to Côte d'Ivoire. Migrant labour remains important in western Ghana, but this is principally provided by people from other parts of Ghana who, as citizens, can claim firmer rights than non-nationals.

Thus, cocoa production has, in the past, been an important channel through which poorer farmers with labour to invest could acquire land and rising incomes. However, this option has now disappeared so far as most Sahelians are concerned. With the current conflict in Côte d'Ivoire, it remains to be seen how the cocoa sector will re-establish itself there and the respective rights and opportunities available to non-indigenous groups.

There is limited evidence for the distributional impacts of recent trends on different parts of the cocoa farming sector. In the case of Ghana, the liberalisation of the cocoa marketing sector has been only partial, with some part of the export market opened to private licensed exporters, while the Ghana Cocoa Board (COCOBOD) retains the majority share. Konadu-Agyemang (2000) notes that while structural adjustment has brought improved incomes for some cocoa producers, it is principally the large-scale producers who have gained the lion's share. In the case of Côte d'Ivoire, the impacts of liberalisation of the cocoa sector have been widespread across the sector. Combined with growing political tension, they have generated deep and damaging cuts in income, and a rapid rise in poverty in many parts of the country (Losch e*t al.*, 2003).

6.3. Livestock production

Livestock numbers, according to FAO, have grown throughout the region over the last 30–40 years (Mortimore, 2003 – *see Annexes 4a and 4b*)[14]. While individual countries have experienced major fluctuations during periods of drought in the 1970s and 80s, the index of livestock units per head of human population has remained broadly constant, implying a level of growth of 2–3% per year. There have nevertheless been major changes in terms of the distribution of livestock numbers within the region, as well as the make-up of herds. In general, livestock have shifted southwards into higher rainfall areas, with a larger proportion held by settled farming groups. In addition many former mobile herders are now becoming more sedentarised. Thus, for example, the major part of the national herd in Mali is now found in the Sikasso region, where cattle provide valuable inputs into the local cotton farming system (traction, manure, assets). Equally, Côte d'Ivoire has pursued a strong pro-livestock policy in the northern part of the country, attracting herders from neighbouring Mali and Burkina Faso, as well as encouraging investment in cattle amongst Ivorian farmers and traders. The proportion of the national herd made up by sheep and goats has risen, these animals conferring greater flexibility and resilience in the face of risk than cattle and camels, and offering prospects for lucrative fattening activities especially in the neighbourhood of major towns. Such fattening is of especial interest in the weeks before major festivals. Intensive milk and dairy production around major cities is also gradually being established.

There is little or no data regarding the structure of livestock ownership in different parts of West Africa. During the droughts of the 1970s and 80s, concern was raised regarding the impoverishment of many pastoral herders, forced to sell remaining breeding stock. While there was evidence for acquisition of herds during the drought by urban investors and farming populations able to benefit from falling animal prices and the desperate situation faced by pastoral households seeking food, there are no data to show whether such a shift in ownership has been maintained. Local level studies in farming areas tend to show a few households own the major share of village-held animals. Economies of scale make it easy to maintain a large herd, but difficult and slow to build up from a small base. Thus, for example, data from village studies in Mali show that many households own a pair or two of oxen. But large herds are restricted to a small number of households (Toulmin, 1992; Brock and Coulibaly, 1999).

[14] Statistics on livestock numbers are notoriously unreliable, given that they represent wealth for many people and, in some countries are still a taxed asset. Aerial survey has helped get a better idea of the relative distribution of different livestock species in terms of location, but data on ownership of animals are especially poor.

6.4. Overall agricultural performance

Taking food and export crops together, many West African countries have been remarkably successful in generating rising levels of output in response to market demand at national, regional and global levels. Such evidence suggests that the farming sector has great capacity to increase production when conditions are right. This is even more marked if account is taken of the growth in many lesser crops for which data are not collected on a systematic basis, such as shea nut, sesame, fruit and vegetables (Wiggins, 2000). As Guyer (1997) notes for Nigeria:

Production and distribution systems have grown over the past several decades, and possibly at a rate which compares favourably with other historical cases even if not with the great spurt achieved in Asia through green revolution technologies. The food system has responded to demand despite difficulties of transport, no refrigeration, a narrow range of storage techniques and no commodity futures market. So even if up to 20% of food has been imported at certain moments, even if some of the urban poor fail to meet nutritional standards, and even if many urban inhabitants also farm, in comparative and historical terms, the feeding of Nigerian towns across the great waves of macro-economic and political fluctuation has been an impressive achievement of productive technique and social achievement. (Guyer, 1997: 4-5).

West Africa's agriculture, far from facing "crisis", has been remarkably successful and responsive to new markets and opportunities. As shown by Mortimore's study (2003 - *see Annexes 4a and 4b*) of farm performance over 1960–2000 for six West African countries, smallholders in most countries have been able to increase substantially their levels of output and productivity, despite often adverse conditions.

Box 18. Accounting for trends in West African crop production

- Four of the six countries (the exceptions being Senegal and to a lesser extent Niger) have maintained food production per capita in terms of a "basket" of staple food commodities, or improved it, and some have recovered from deep crises in the early 1980s, to levels comparable to or better than those of the early 1960s. Only in Senegal did the indices decline from the beginning to the end of this 40-year period; in Niger decline was arrested (though not reversed) after 1985.
- The performance of major crops, or of groups of crops, has often differed within the same country. An overall "food sufficiency index" takes account of grain-tuber energy equivalents, allowing room for adaptive swings in crop preferences, both of consumers and of producers.
- Fluctuations, clearly attributable to rainfall variability (especially in Niger, Mali and Senegal), translate in per caput terms to a threat to food sufficiency at a national level, which increases the likelihood that food *security* comes under threat in poorer households, including those of many producers, who may decapitalise their productive potential afterwards.
- There appear to be many adaptive strategies at work as producers shift among crops and diversify in response to food marketing opportunities. This process has been noted in Senegal where the traditional crops are most under threat.
- Since the production of food per capita only rarely correlates with either the growth of the total population or the growth of the agricultural population, a simple demographic mechanism must be discounted in the food equation.
- Much more important is policy and the global economic environment, which better explain the widespread decline in food sufficiency that occurred in many countries during the 1980s, and the subsequent recovery in most of them.

Source: Mortimore 2003(see Annexes 4a and 4b)

However, description and analysis of West Africa's agricultural sector and processes of transformation depend on a limited and unreliable body of data. There is particular difficulty with information regarding land use changes, the distribution of holdings, access to land and levels of productivity. National level data suffer serious weaknesses due to the limited capacity of many governments to maintain effective statistical coverage of agricultural production throughout the country. Some countries are now strengthening such systems of data collection, which are essential to understanding the dynamics of change within different farming systems, as well as pointing to areas of food deficit or falling productivity. Given the weak statistical base, analysis of changes to West African farming requires the combination of different sources and forms of evidence. These include local level studies, aerial photographs and satellite imagery, focused household surveys, poverty studies, and national level data. The absence of good quality data helps explain the different interpretations made of trends in West African agriculture. A second reason for there being quite marked disparities in the discourse and narrative adopted by different actors relates to the diverse experience undergone by different countries in the region over the past forty years.

Summary

Thus, for five of the seven countries examined above,[15] the last 30–40 years have shown much more positive experience with agricultural growth than is usually admitted by those asserting Africa's agriculture to be in crisis. Despite periodic drought, switches in policy, devaluations and cutbacks in state support, farmers have managed to maintain growth in food production and kept pace with population growth, while at the same time expanding exports of key commodities. Livestock numbers have also been maintained, with a growing level of integration between animal and crop production in many areas. Cropping patterns have shifted towards a more diverse range of commodities, from basic grains to maize, cowpeas, sesame and market gardening, in response to growing urban demand generated from expanding urban centres (OECD, 1998).

The widely experienced trough in agricultural productivity in the late 70s to mid 80s was corrected through changes in government policy towards the agricultural sector, such as liberalisation of markets for key commodities and abandonment of price controls on basic grains. Equally, tight controls over choice of crops within state-managed irrigation have been lifted, freeing farmers to take advantage of new markets, such as fruit and vegetables within the Office du Niger in Mali. Where consistent support to farmers has been provided (such as technical assistance, credit, access to inputs, marketing), performance has often been remarkable with great capacity for growth in output and increasing yields (such as in the cotton zone of Mali).

But continued ability to adapt and respond to new opportunities and to the challenges of globalisation are by no means assured. Farmers will continue to invest effort and capital in improving farm production where a reasonable return can be assured. But such returns are threatened by cheap imports, falling world market prices, and difficulties in accessing credit and inputs. At the same time, policies in favour of agricultural modernisation would appear to favour large-scale producers at the expense of the millions of family farms which make up the current agricultural sector. Such favouritism is justified by policy-makers on the basis of family farms being unable to deliver a "modern" agricultural economy. Yet this position is based on a highly partial interpretation of the evidence available, which ignores the great contributions made to domestic food supplies and exports by millions of small farmers, as well as the broader multi-functionality arguments in favour of promoting smallholder agriculture.

[15] Ghana, Côte d'Ivoire, Nigeria, Niger, Senegal and Mali from Mortimore's study (2003), and Burkina Faso (Mazzucato *et al*., 2002).

VII. WHO IS GAINING, WHO IS LOSING? OVERALL IMPACTS ON POVERTY AND LIVELIHOODS

The evidence above paints a varied picture, in which many rural producers have continued to adapt to new agricultural and economic opportunities with remarkable energy and ingenuity. Incomes and livelihoods have become more diverse, and migration now constitutes a central component in many household budgets.

- How have these changes in agriculture, markets and opportunities translated into overall levels of incomes and welfare?
- Have rural people become better off over the last 20–30 years?
- Which social categories have done particularly well, and who has done badly?

These are complex questions given the very wide range of circumstances and the weak data base on which to rely.

7.1. What evidence for poverty?

Conventional wisdom, as expressed in many studies on rural poverty in Africa, asserts that farmers have seen few if any improvements in yields and incomes, and are, in many cases, becoming further impoverished. According to this view, the combined effects of low yields, poor market prices, and limited access to credit and other inputs are leading to a downward spiral of impoverishment and decapitalisation. It is common to hear of African agriculture being "in crisis". However, there are also reasons to question this pessimistic interpretation of the changes underway in the case of West Africa, to do with the adequacy of the data on which such assessments are made, and the counterfactual evidence from many micro-level studies. There are also risks that people are seeking to demonstrate higher levels of impoverishment than may actually be the case.

Data adequacy
There are inevitable weaknesses in the quality of data available to assess levels of poverty and how these have changed in recent times. Such weaknesses stem both from how household surveys have been carried out (size, representivity, time period, etc.) and from assumptions made regarding the nature and sources of household income. Thus, for example, household budget data is notoriously difficult to collect due to inability or unwillingness to recall the details of incomes received and transactions undertaken. This is especially so where, as in many large rural households, members are pursuing both collective and individual activities. The household head will rarely be able to speak on behalf of the many individuals within the family and their private patterns of spending. Equally, there may a strong reticence in admitting to the significance of private activities and incomes, since these represent an aberration from the social ideal of collective endeavour. Thus, there is likely to be a particular problem in getting good budget data particularly for larger households, in which a significant amount of time and activity is spent on individual enterprise. The question of valuing income is also problematic for households which rely on food and services largely produced by household members. These comprise not only the family's regular grain supply, but also a range of other food stuffs, livestock produce, and a range of materials gathered from the bush.

Incomplete understanding of household income diversity
Household surveys often fail to provide complete coverage of all sources of income, focusing on the most obvious activities and ignoring the rest. Thus, for example, the Mali poverty survey of 1998–9 came up with the surprising conclusion that families in the southern part of the country were amongst the poorest, a result which the authors of the report themselves noted as being counter-intuitive (ODHD, 1999). However, a closer look at the data showed that this finding had emerged because the survey had focused only on the incomes gained by farmers from sales of cotton. Most farm households in southern Mali practice a much more diverse range of activities, which include trade, livestock-rearing, vegetable and orchard production, and reliance on bush produce. In addition, many such

households gain a large proportion of income from migrants' remittances, especially those stemming from Côte d'Ivoire. Hence, actual income was probably two to three times higher than that estimated by the survey.

Risks of bias
There may be some temptation for governments to under-estimate incomes in order to ensure their country remains within the UN category of "Least Developed Country", and qualifies for poverty-focused aid funds. There are grounds for concern that using poverty as a major criterion for distribution of aid funds will encourage countries to demonstrate low and falling levels of income, in order to maximise their receipts of donor funding.[16]

Further attention is needed to examine the underlying concepts on which the various poverty assessments are based and so the areas of weakness which need to be addressed, including the limited amount of time series data. The net effect of such difficulties with the data is to produce an over-estimate of the incidence and degree of poverty amongst those rural households with significant non-agricultural incomes, where much food consumption is based on own production, and where people may be unwilling to report their entire cash earnings, either at household or individual level.

7.2. A broader look at rural livelihoods

A detailed study of rural livelihoods in southern Mali showed that three elements were considered the key to sustaining household welfare and avoiding impoverishment (Brock and Coulibaly, 1999):

- *Household management*: which refers to how well the household is managed, it being widely believed that the situation faced by a poorer household can be considerably improved by good judgement and handling. Conversely a well-off household can see its fortunes ruined by bad management of people and assets.
- *Labour*: which describes not only the number of people in the household workforce but also its composition in terms of age and gender. A household with a relatively young labour force with a balance between the genders is considered much more sustainable than one where there are few children, or where these are mainly girls or women.
- *Wealth*: which incorporates ownership of various assets, such as agricultural equipment, and livestock of value to the farming enterprise as well as a source of cash in times of need.

According to these criteria, the better-off households were those who were able to mobilise a large workforce, not only to cultivate several fields and crops, but also to pursue a diverse range of income generating activities both collectively and for their individual gain. At the same time, larger households could provide better protection for their members from demographic variability, and generate a larger surplus from which to build up household assets. By contrast the poorest and most vulnerable households were typically small in terms of workforce, with few livestock and other productive assets. As a result, they found it difficult to maintain a viable farming enterprise and could offer their members few opportunities to earn incomes of their own, since all earnings must be put into the common pot. Often they also had few social links to other members of the village, having settled relatively recently. These factors together help explain how some families could develop and expand activities while others suffered misfortune.

[16] A similar risk arose during the negotiation of the UN Convention to Combat Desertification, when a surprisingly large number of countries claimed to suffer from desertification, since they had hopes of substantial funds becoming available for "affected countries".

Box 19. Successful livelihood diversification in Zaradougou

Household B is a complex household, comprising the household head, his married son and his brothers, all of whom have families. The household is noted by its neighbours as one which functions well, with high morale and good teamwork. Like most of the large Senoufo households in the village, in addition to the cultivation of cotton, the household also owns a plantation in Côte d'Ivoire and an orchard in the village. These three enterprises are managed at the level of the central household. One member of the household is the person in charge of cash. Some of the profits of the three major enterprises of the household are divided between the members of the household once costs have been met. Investments at the household level are decided by a council of male household members.

Small stock and poultry rearing are carried out at the level of the nuclear sub-family (*ménage*) within the extended household. Although the *ménage* has no traditional social function within the complex household, it has an important contemporary economic function in allowing the disaggregation of certain income generating activities. Profits from these activities are kept by those who carry out the activity. Finally there are individual-level activities – off-season vegetable cultivation, sales of firewood, individual women's fields, shea nut butter production, petty trade – from which the individual is allowed to keep the revenue generated.

The sustainability of this household is perceived as very high, despite the fact that their yields of cotton are considerably lower than many other households of similar size. There is no danger of break-up, since all members are compensated in cash for their labour and individual activities are sanctioned.

Source: Brock and Coulibaly (1999)

By contrast, the limited opportunities available to poor, small households are evident below.

Box 20. Pooling limited resources: the option of poor households

This simple household consists only of the household head, his wives and their children. They engage in several diversification activities aside from farming, including sales of firewood and thatching material and small stock rearing. Their most important income generating activity aside from the cotton is the sale of smoked fish, which they buy from neighbouring Kléla and sell on to traders from the town of Koutiala, 120km to the north. As a simple household, all revenue is pooled for the use of the family, with the household head being the chief decision-maker. Unlike most of the other households in the village, the women do not cultivate individual fields.

Source: Brock and Coulibaly (1999)

Evidence from case study materials would suggest a mixed picture regarding processes of wealth creation and impoverishment at household level. There are relatively few studies of changes to household circumstances which span a 10–20 year time period. However, where such evidence does exist it points to a diverse set of pathways, only some of which imply greater impoverishment. A study of Dalonguebougou, in central Mali (over the period 1980–1998) found a mixed picture, but with most households better-off over the 18 year period. The local Bambara say that a family's fortunes are like the feet of a traditional weaver – at one moment the left foot is up, but later on it will fall and the right foot will rise high. This suggests a level of social mobility which is probably closer to theory than reality. In practice, it is easier for larger, better-off families to withstand risk and invest in the equipment, cattle and marriage alliances necessary to assure their longer term sustainability. Nevertheless, a large well-off family can see its fortunes diminished through a combination of misfortunes such as illness, death, internal dissent and household break-up (Toulmin, 1992; Brock and Coulibaly, 1999).

One demonstration of the increased income and purchasing power of villagers in a rural community like Dalonguebougou can be seen by the enormous change in their access to goods over 18 years. From two small table-traders in 1980, the village now has five stores stocking many different goods. Box 21 shows the content of Babou Dembélé's shop in the village, which is a symbol of such changes.

Box 21. What can I buy in Babou's shop?

Items in Babou Dembélé'sshop: 1980

Tea, sugar, soap, cigarettes (Liberté only), salt, petrol, sweets, kola and dates.

Items in Babou Dembélé's shop: 1998

Tea, sugar, soap, cigarettes (many brands), salt, petrol, sweets, kola, dates, nail varnish, chocolate biscuits, scissors, rattles for babies, honey (local), biscuits (chocolate), rope (nylon), rope (baobab), string, razor blades, lamps, milk, soap powder, spare parts (bike), spare parts (moped), tyres, clothes, well pails, plastic pots, cooking pots, knives, tomato concentrate, bike pumps, thread, cotton fabric (local), cotton fabric (manufactured), batteries (several sizes), tea (brown), coffee, flip flops, kerosene, matches, etc.

Source: Brock and Coulibaly (1999

However, while some farm households have been getting better-off, others have not been so successful. A process of growing social and economic differentiation is frequently noted as taking place (Watts, 1983). This is not a recent process but has probably always existed, due to the differing capacities of households to cope with risk and shocks. Associated with differentiation is a widespread increase in market-based relations, which means that many commodities which were formerly given freely, lent or exchanged are now being traded for cash. As noted earlier, in many areas, access to land is now often subject to a significant cash payment, while formerly it could be got on long-term indefinite loan (Lavigne Delville *et al.,* 2002). Where sales of grain had in the past been discouraged, to retain sufficient stocks for times of need, villagers are now selling off their surplus. Looser collective ties within the broader community and the family group, combined with weaker commitment to long-term reciprocity, bring greater vulnerability for weaker members. Not only are richer households less willing to help out a poorer neighbour, but, in some families, the old and poor may be left to care for themselves much more than before. Recent research in southern Burkina Faso speaks of an increasing number of elderly people left with no-one willing to care for them (Dabiré and Zongo, pers. comm.). At the limit, those who have no other option may move to town, in the hopes of finding work, food and shelter.

Summary

Have rural people become better off over the last 20–30 years? It is difficult to paint a clear picture as regards overall changes in incomes and welfare for West African farmers. While some have done well and flourished, others have become poorer. Micro-level case material shows that many households have been able to take advantage of new opportunities and improve their circumstances, through more dispersed allocations of family labour, into migration and other activities. The evidence does not support a picture of growing immiseration for all. Certain social groups have been particularly vulnerable to impoverishment. These include:

- Households suffering a combination of misfortune, such as harvest failure combined with illness within the family and poor leadership;
- Pastoral herders who suffered heavy livestock losses in the 1970s and 80s and have been unable either to restock, or gain secure access to land for farming;
- Those with weak claims to land, and those in peri-urban areas who find themselves thrown off their plots as land values rise.

There are also clearly cases where, due to major events such as civil conflict, a large number of people find themselves substantially worse off than before. As noted earlier for Côte d'Ivoire, the impact of structural adjustment measures combined with a collapse in world market prices and breakdown in social and political cohesion led to a threefold increase between 1987 and 2002 in those below the poverty line (Losch *et al*., 2003). The subsequent period of escalating conflict can only have brought a further rapid downward spiralling in incomes, livelihoods and security, except for those who have found a new niche in a war-based economy.

VIII. MAIN TRENDS IN WEST AFRICAN AGRICULTURE AND FAMILY FARMS: PROSPECTS FOR THE NEXT 10–20 YEARS

Looking forward, can family farms "feed the nation" and compete in global markets? Based on past experience, the answer is a qualified "yes", but it all depends. The future structure and performance of West Africa's farming sector will be the result of a number of factors, some of which are not in the hands of national level decision-makers.

- ***Demand for staple food commodities is unlikely to decline, given current rates of population growth and food preferences determined by both culture and poverty.*** Rising incomes will provide a more diversified market for a broader range of grains, fruit and vegetables, livestock produce and other higher value products. The strongest evidence that family farms will continue to satisfy these markets is the strength of recovery from stagnating food production in the 1980s. Economic incentives rather than capacity are the chief constraint, hence the importance of increasing the competitiveness of West African agriculture within the sub-region and ensuring protection from cheap imports.
- ***National agricultural policy and strategy are important factors affecting the direction and form taken by the farming sector.*** Governments face choices between the kinds of agriculture they wish to promote. Design of agricultural strategy does not take place in a vacuum, but is subject to lobbying and pressures from a range of internal and external actors. If the family farm is to continue as a central component of the agricultural sector, national farmer federations and producer organisations will need to argue the case in their favour and challenge alternative visions which see "modernisation" as needing to follow a route favouring large commercial farms. With the growing importance of sub-regional policy debate and decision-making, such lobbying also needs a sub-regional dimension.
- ***Other national policy measures have important linkages to the future performance of the farm sector, most particularly reforms to land tenure legislation and administration.*** Tenure reform is under discussion in many West African countries, with a focus on ways to increase levels of agricultural productivity, reduce conflicts, ensure equitable access, and promote sustainable land use. Changes in the law and administration of land tenure inevitably have distributional consequences. Many governments have sought to assert their underlying rights to manage land and allocate it to those they choose, by wresting control from customary structures. In some cases, this can open up opportunities to acquire land for groups with weak rights under customary systems but, most often, this assertion of control by government becomes a means to disempower ordinary farmers in favour of the elite. If smallholder agriculture is to have a secure future, it needs an appropriate system of tenure legislation and administration which firmly supports the rights of the small farmer against land-grabbing.
- ***Environmental challenges constitute a potential threat to continued growth in agricultural output.*** Future trends in rainfall are unknown, and global climate models are not able to predict with any confidence the likely change to weather patterns in the West African region. However, rising global temperatures seem certain, and these will bring increasing levels of evaporation. This means that the value of any given level of rainfall will lessen in terms of its contribution to primary production. For this reason, all farmers will need to pay greater attention to more intensive management of water and soils.
- ***Rising levels of demographic pressure, especially around major towns, will increase the scarcity and value of land.*** In many peri-urban areas, these processes are leading to high levels of insecurity for rural dwellers, whose rights as long-term occupants of the land are ignored by the powerful in the rush to grab a precious asset. Governments must find ways to provide greater security over land, to encourage investment, ensure equitable access and reduce risks of conflict, especially in these high risk zones. Farmers have shown themselves ready to invest substantial amounts of effort in land improvement where they face promising markets for their crops, and are confident of their land rights. Security does not necessarily stem from issue of paper land titles, but is the consequence of the state recognising the legality of local processes for managing land.

- ***The composition of West African farm production must continue to evolve in response to emerging markets for some products, and falling returns for others.*** For example, there are serious questions about the viability of rice farming in the Senegal River Valley, given the availability of cheap rice from South East Asia. A better strategy might be for Senegal's irrigated agriculture to focus on higher value commodities which can better offset the costs of pump irrigation. Crop diversification in this direction has been apparent for some years, such as into okra for Dakar's markets. Rice growing in the Office du Niger, Mali faces a more promising option for the future in part due to some natural protection from imports as a result of the country being landlocked, as well as reliance on gravity irrigation rather than diesel-fuelled pumps. The future of the West African oil seed sector needs thought, given its need to compete in an over-supplied global market. Establishing a quality product for domestic and foreign markets will be important, as well as ensuring compliance with stringent new phyto-sanitary controls, especially for groundnuts, which face particular challenges to demonstrate no trace of aflatoxin.
- ***New niche markets may offer promising alternatives through fair trade, organic or ethical trade initiatives.*** While currently only a tiny proportion of the market for most products (the exception being coffee), there is a rapid growth of interest amongst Western consumers regarding where their food and drink comes from. However, such interest is a two-edged sword, with part of the environmental movement keen to promote local food systems above all else, a move which could shut off opportunities for many Southern farmers. Niche markets need good transport and infrastructural connections if they are to offer a significant outlet for farmers. Currently, many fair trade and organic schemes present serious obstacles to smaller producers because of the transaction costs associated with being part of such a scheme. Evidence shows that if smallholders are to benefit as a group, the standards or certification scheme must have promotion of "small farmers" as an explicit objective. If this is not the case, then the tendency will be for them to be squeezed out by larger, better organised producers.
- ***The future impact of global markets on economic incentives in West African agriculture will depend on successful negotiations at the WTO and attention to improving farm-gate prices, including measures to protect the agricultural sector, where necessary.*** The end of surplus dumping by the USA and the EU is a precondition for improved market incentives for family farms or large-scale commercial farms alike. If West African farmers continue to face falling world market prices for their principal exports abroad, and fierce competition from OECD farm surpluses in their home markets, the future of the rural population will be greatly damaged. The farming sector has managed remarkably well over the last 20–30 years in the face of serious difficulties, but there are limits below which rural life becomes insupportable.
- ***There is a stark mismatch between the commitment from OECD nations to meeting the MDGs, especially to making a serious reduction in global poverty levels, and current policy towards their own farming sector and trade measures.*** This provides a valuable lobbying and advocacy opportunity for informing the OECD public and working with a range of groups able to exert pressure on current processes of negotiation and efforts to increase policy coherence. Such pressure will be more effective where backed by strong evidence which underlines the links between OECD farm and trade measures and the prospects for a sustainable livelihood for farmers in West Africa.
- ***Export agriculture has been promoted as the obvious escape route from economic stagnation in African countries. But does this strategy make sense in the context of a long-term decline in the terms of trade for tropical commodities? Is a downward pressure on world market prices not inevitable if all countries pursue the same policy of expanding agricultural exports?*** Increased processing of primary commodities is a key means to add value to exports as well as feeding into sub-regional markets (such as instant coffee produced in Côte d'Ivoire). Continued pressure is needed for change to tariffs imposed by OECD nations for processed commodities which would otherwise offer an important means of generating increased incomes and employment in poor countries.

Summary trends and prospects

- A growing level of demand within the region is likely for more diverse grains, fruit, vegetables, meat and dairy produce, which may be met by a mix of domestic production, sub-regional sources and imports from other major producers (EU, US, Latin America and South East Asia).
- Land will become increasingly scarce and valuable, especially in peri-urban areas and high-potential zones. A pragmatic approach is needed to provide greater security for millions of smallholder farmers, to encourage further investment and productivity growth.
- Smallholder farmers must organise to lobby their governments to ensure their particular needs and priorities are taken into account in design of new strategy and policies, not only in the agricultural sector but also a range of other related fields, such as land tenure and trade negotiations.
- The future for family farms in West Africa depends greatly on agricultural trade negotiations under the WTO Doha round, to cut over-production and dumping by richer countries, as well as easier access to developed country markets.
- Reliance by West African farmers on traditional export crops does not provide a secure route out of poverty given global over-production, declining terms of trade, and tariff escalation on processed produce.
- The sincerity of OECD countries' commitment to meeting the MDGs will be seriously tested by whether they are ready to cut farm subsidies, and help smallholders in poor countries "grow their way out of poverty".

IX. TRANSFORMATION OF WEST AFRICAN AGRICULTURE: THE GLOBAL CONTEXT

9.1. West African agriculture and broader processes of globalisation

The West African region has long been part of the global economy and trading system, from the commerce in gold and salt of several millennia, through the misery of the slave economy to present-day patterns of production and trade. Such interactions have transformed patterns of settlement and agrarian relations in the region, as well as broader structures of social, economic and political power. Yet, recent decades have witnessed a decline in West Africa's share of world trade.

Within the global economy, OECD member states occupy a position of overwhelming dominance, comprising the richest and most powerful countries in the world in economic, political and military terms. Their agricultural policy measures, though designed to achieve domestic objectives and satisfy particular constituencies, have major and very significant impacts on the rest of the world. Equally, policies in the fields of trade, investment and aid have enormous effects on countries around the world. Until recently, most attention has been focused on aid policy and transfers from rich to poor countries. But it has become increasingly clear that the intended or unintended consequences of trade, agricultural and investment policies of OECD nations can exert much larger impacts on the developing world than aid flows. In the past, such areas of domestic policy were not open to broader global debate but are now being increasingly challenged in formal negotiating arenas such as the WTO, and by a coalition of developing country governments, lobby groups and NGOs who point to the hypocrisy and contradictions between different branches of government policy. As a result, there is increasing commitment to the idea of policy coherence amongst OECD member states, at least in theory. Whether domestic political constraints will allow for greater commitment in practice remains a serious and unresolved question. Although farmers represent a small proportion of total population in rich countries, they frequently exercise a disproportionate level of political power and leverage on government.

All UN member governments have signed up to the Millennium Development Goals which include a clear commitment to halve the number of people living in extreme poverty and hunger by the year 2015. Goal 8 includes commitment to a global partnership for development, to comprise an "open, rule-based, predictable non-discriminatory trading and financial system", which addresses the particular needs of least developed countries, such as through tariff and quota free access, enhanced debt relief and additional funds for those committed to poverty reduction. The need to push for much greater policy coherence by OECD countries is especially evident when considering how to meet the MDGs, given the very damaging impact on poor developing country farmers of current agricultural and trade policy measures. Examples of such adverse impacts are outlined below, before examining the various arenas and opportunities for making progress towards more equitable outcomes.

Earlier sections have described the remarkable strength and adaptive capacity of smallholder farmers in West Africa. But levels of poverty and food insecurity remain worrying, and the sustainability of the family farming sector in future is by no means assured. Low returns to farming limit the capacity and interest of farmers to invest in their land and discourage younger family members from staying in the sector. Low and uncertain farm incomes provide a weak foundation on which to build more diverse local economies in rural areas.

It is widely believed that growth in agricultural yields and output is an essential precondition for broader growth, as well as being likely to benefit poorer groups in society. Apart from exceptional cases where access to a specific resource has allowed the normal model of economic growth to be by-passed (such as Hong Kong and oil rich states), economic development seems to depend on the prior strengthening and intensification of agriculture as a means for broader diversification. Agricultural development provides a food supply for the cities, and resources to process for domestic and export production.

Yet this model of economic development, diversification, and growth has run up against serious barriers in the case of many African countries, which have been forced to liberalise their economies within a global economy in which they face fierce and unfair competition. As argued by Mazoyer (2001) there is such a marked difference in levels of productivity between industrialised farming in richer parts of the OECD and small-scale farmers elsewhere, due to a combination of mechanisation, input use and agricultural support measures which mean that staple crops can be produced in great quantity and sold around the world at prices which beggar developing country farmers (Mazoyer, 2001).

Such conditions have led to calls for developing countries to re-establish tariff barriers for agricultural commodities, creating a more favourable environment in which their farming sector can develop, and setting up barriers against dumping of farm produce from other parts of the world (Koning, 2002). The Asian tiger economies operated behind such barriers, which enabled them to grow rapidly. Without such protection, it is argued, the virtuous circle – of rising demand and prices for food, increased investment and intensification of farm land, increased incomes and investment of surplus in economic diversification, leading to further growth in food demand – cannot be expected to occur. Improved price ratios for farmers constitute the *sine qua non* for addressing poverty in many poor countries, while revenue generated by tariffs on agricultural imports would provide a significant source of income for governments. It remains to be seen whether West African governments have sufficient room for manoeuvre within WTO and other negotiating arenas to argue successfully for getting such measures accepted as special and differentiated treatment essential for longer term growth and poverty reduction (Koning, 2002).

9.2. OECD agricultural policy and developing country farmers

Recent research has been carried out to assess the impacts of OECD member states' agricultural policy on developing country farmers. In particular, OXFAM has issued several reports on specific commodities aimed at informing debate during negotiations of the WTO round and CAP reform.

The reports cover sugar, dairy and cotton production and, while the first two are not focused particularly on West Africa, they all nevertheless raise important broader issues. This research highlights the large damaging impacts on developing country farmers of EU farm subsidies and various export refund schemes. There is a clear need for more work in this area, focusing on commodities of greatest importance for West Africa, and aiming to identify in more detail the differential impacts on small and larger farming enterprises.

Box 22. Evidence of damage from OECD farm subsidies on poor country farmers

Dairy

The EU dairy policy currently costs 16 billion euros each year, equivalent to more than $2 per cow per day, and representing 40% of the value of EU dairy production. The policy provides for a mix of price support, production quotas, import restrictions and export subsidies. Despite the imposition of quotas, production exceeds consumption, and surplus must be disposed of in both domestic and foreign markets. The EU remains one of the largest exporters of milk and milk products globally, accounting for 40% of whole milk powder exports, a position which can only be maintained by continued subsidies. Export subsidies are used to enable dairy produce to be sold at prices well below cost, in many cases undercutting local producers. Thus, for example in Kenya, India and Jamaica, while development aid has been spent encouraging more effective local dairy production, export subsidies are destroying markets for local producers. Far from bringing benefits to small-scale family farmers in Europe, the main beneficiaries from diary subsidies are large processing and trading companies, not farmers.

Sugar

The EU is one of the highest cost sugar producers in the world, yet is also the second largest exporter, due to the export subsidy system. Current world market sugar prices are low and unstable, given chronic over-supply. In 2000–01 the EU exported almost 7 million tons of sugar at prices far below the costs of production, despite a quota system intended to curb supply. Export refund systems and cross-subsidies allowed this sugar to be sold at prices far below production costs, depressing world market prices and pushing low cost developing country producers out of third markets. Taking Mozambique as an example, production costs are amongst the lowest in the world, and the sector provides incomes and employment to 23,000 people, with great additional potential if export markets could be further developed. A World Bank study estimates that EU subsidies have brought a fall of 17% in world market prices and made it impossible for Mozambique to compete in third markets. For example, in 2001, Europe exported 770,000 tons of sugar to Algeria and 150,000 tons to Nigeria – both natural markets for competitive producers like Mozambique. While the EU has a system of preferential access for African-Caribbean-Pacific (ACP) countries, this constitutes a small fraction (8%) of the EU consumer market and is counter-balanced by an equivalent volume of sugar re-exported with export refunds. The Everything But Arms (EBA) initiative is providing additional access to sugar-producing least developed countries, but this is being achieved by cutting back on other ACP countries, rather than by curbing domestic production within the EU.

Cotton

Agricultural subsidies in the US are at the heart of a deep crisis in world cotton markets. American cotton farmers benefit from substantial farm subsidies while farmers in rural communities in the poorest countries suffer the consequences of such largesse. World cotton prices have fallen by half since the mid-1990s, with particularly devastating impacts on West and Central Africa, where more than 10 million farm households depend on cotton production. All of these producers are in the smallholder sector. Many millions more people are indirectly affected because of the enormous importance of the cotton sector to the overall economy of many countries in the region. Cotton supplies one of the main export crops and sources of government revenue, as well as ensuring producers with an income and means of feeding their families. West African cotton farmers are reckoned to be amongst the lowest cost in the world and yet they are losing world markets and suffering growing poverty. Costs of production in the US are three times those of Burkina Faso, yet the US has expanded production in the midst of a price slump, bringing further collapse of world market prices.

…/…

The scale of support to US farmers reflects the political importance of the 25,000 cotton farmers in key states. Every acre of cotton farmland gains a subsidy of $230, which is five times the amount set for cereals. Total subsidies equal $3.9billion, which exceeds the GDP of Burkina Faso and constitutes more than 3 times USAID's budget for Africa. Research estimates that removal of US subsidies would raise cotton prices by 26%. It is estimated that such subsidies have led to losses of more than $300 million for the region as a whole, with the eight principal cotton growing countries losing more than $190 million in export revenue forgone. Thus, for example, it is reckoned that in 2001 Mali gained $37m in aid from the US but suffered a loss of $43m from the impact of cotton subsidies. Cotton subsidies have also undermined the benefits from the HIPC debt relief programme, since countries have lost more in trade earnings than they received in relief. As with dairy and sugar payments in the EU, the largest share of these subsidies goes to a small proportion of farmers and processors, with the ten largest cotton farmers in the US reaping three-quarters of all payments.

Source: Oxfam Briefing Papers (2002)

The Brazilian government has challenged the US cotton subsidies through the WTO procedures, on the grounds that they constitute clear evidence of dumping, with cotton being sold at prices which bear no relation to farm production costs, thanks to heavy export credit payments. Several West African cotton growing associations are also urging their governments to follow suit. Nevertheless, there are fears that a threat of legal action could lead to retaliatory action by the US and withdrawal of aid, trade and debt relief.

Livestock provide another example of adverse impacts from OECD agricultural and trade policy spilling over into West African markets.

Box 23. Trends in meat imports into West Africa

Trade in livestock from the West African region to Europe and elsewhere is relatively limited, consisting primarily of small stock exports to North Africa. Impacts from trade have been mainly felt in the converse direction, with much concern raised in the 1980s and early 90s regarding the dumping of cheap frozen meat by the EU at highly subsidised prices. While providing urban consumers with access to cheap meat, livestock producers and traders in West Africa mounted a successful campaign with support from several NGOs to lobby the European Commission to seek an end to such dumping which, they claimed, had had adverse impacts on prices obtained for their own animals. The devaluation of the CFA franc in 1994 further added protection to livestock trade within the region, and generated a substantial increased flow of animals from the Sahel to coastal markets. It is, however, unclear how the benefits from increased sales have been distributed within the trading system and between small and larger livestock holders.

Despite the fall in dumping of frozen beef cuts since the early 1990s by the EU, there has been a very significant rise in very cheap poultry cuts in West Africa. Mainly from Europe, where costs of production are very low, these meat exports are providing intense competition on domestic markets and adversely impacting on margins for local producers. Such quantities of imported poultry meat are considered likely to increase substantially in future, with additional sources of supply from the US, Brazil and others

Source: Solagral (pers. comm. 2003)

9.3. OECD trade policy and developing country farmers

West African countries have slipped behind in terms of the share of global trade, due to various factors:

- Most countries remaining heavily reliant on primary commodities for export in a largely unprocessed state. As was seen in Section 6.2, the past 30 years have seen a continuous decline in the price of the main export crops.

- Concentration and restructuring of the global food and agri-commodity chains leading to higher margins being taken by middlemen, and a further squeeze on the values obtained by primary producers.
- Increasingly tight food standards set to address the concerns of rich consumer markets, but with no consideration taken of developing country capacities, the certification requirements and adverse effects on smaller producers for whom the transaction costs of meeting such requirements may be prohibitive.
- Changes to products to minimise raw material components and substitute other elements, such as the EU Chocolate Directive and development of synthetics.
- Tariff escalation on processed goods limiting market access and discouraging domestic industrialisation and value added.
- Continued quotas on key commodities such as sugar, rice and cotton.
- A mix of agricultural support measures in developed countries which make it very difficult to compete whether in OECD, third or domestic markets.

The current Doha round of trade negotiations under the auspices of the WTO are intended to focus particularly on the needs of developing countries. It is widely agreed that change in agricultural provisions will be key to making progress, given disappointments in the past and the perception of developing countries that their interests and needs have been ignored. There is much suspicion that the most powerful countries will continue to use the process to force change on poorer countries, by using their economic and political muscle, while refusing to make significant concessions of their own. The WTO rules have led to a shift in the nature of agricultural support measures with OECD governments moving funds from the red and amber boxes (those that have a clear linkage to output) to green and blue box measures (those de-coupled from output). But since overall levels of financial support have remained the same and often increased, the net effect on farm income has been broadly constant. Thus there has been no real change in net impact.

Current negotiations of the Agreement on Agriculture suggest that little progress will likely be made. The March 31st deadline has passed without reaching agreement on final text. Neither the EU nor the US are showing much willingness to shift their policy in substantial ways, each arguing that the other is far worse in terms of trade distorting practices. Within the EU, France has maintained a staunch defence of the Common Agricultural Policy (CAP), which is unsurprising given the large share of the overall CAP budget and enormous benefits gained by France's farmers from the funds disbursed and the consequent political costs of dismantling such a system. Equally, the US has made it clear that "we need to make absolutely certain that these WTO agricultural negotiations result in a good deal for America's farmers, ranchers and agricultural producers", (Senator Grassley quoted in www.iatp.com newsletter March 2003) without which there will be no domestic agreement to proposed changes. Such domestic constituencies are likely to be of great importance in the run-up to the next US presidential election in 2004. Other countries with substantial programmes to support their farmers (Norway, Japan, Switzerland) are arguing for the need to adopt a multi-functional approach to the agricultural question, so that issues such as food labelling, environmental issues and animal welfare can be brought into the equation, and justify continued protection of their own farmers.

Many developing countries are arguing for the right to erect higher tariffs, especially on farm goods that they think are being dumped. Normally, countries suspecting dumping have to follow a lengthy procedure before being allowed to impose tariffs, by which time a lot of damage may have been done to domestic producers. Least developed countries have some room for manoeuvre within the context of the special and differentiation treatment allowed under the WTO negotiations, which require further investigation, given the large number of West African countries which fall into the LDC category.

9.4. MDGs, Poverty Reduction Strategies and policy coherence

Donor agencies have committed themselves to trying to meet the MDGs, especially those concerning poverty reduction. Various measures are being used for this purpose, most particularly the establishment of Poverty Reduction Strategies (PRS) by recipient governments, to provide the framework for a major focus on service delivery for health and education likely to bring improvements to poorer members of the community. The PRS process focuses almost entirely on national level conditions and constraints, and the necessary changes to policy and implementation required to achieve major improvements to the livelihoods of poorer people. Thus, for example, the DAC Guidelines *Rising to the Global Challenge* (OECD, 2001) identify a number of thematic areas, such as promoting pro-poor growth and reducing inequality which addresses an entirely domestic set of constraints, empowering the poor through reform to judicial, institutional and political systems, provision of basic services, adopting a sustainable livelihoods approach and reducing vulnerability and managing shocks. At no point does discussion under any of these themes touch on international issues or blockages which might need lifting. Only one page out of 24 covers the possible adverse impacts of policy in trade and other fields which might hamper or negate action within national level PR strategies. While one page is better than none, it suggests that these issues are not as yet at the forefront of donor thinking which is still resolutely focused at bilateral level, and at the nation-state and below. This may be due to inadequate knowledge and understanding of the adverse impacts of higher level processes. It may also be due to the very real and difficult conflicts in policy objectives and the need to face up to a series of domestic constituencies which will resist change. This suggests the importance of generating further evidence of how such policy measures affect people in different parts of the world, and presenting this information in ways which capture the public imagination, as a means to provoke calls for policy change within OECD nations.

Summary

West African farmers are increasingly exposed to the diverse consequences of globalisation. In many OECD countries, farming is carried out on an industrial scale, supported by extensive subsidies, and generating a variety of environmental and social externalities at local and national levels. Over-production of agricultural commodities leads to falling prices and dumping of surplus on markets around the world, including West Africa. At West Africa's current level of economic development, agriculture remains central to GDP, employment, livelihoods and export revenue. Such dependence is likely to continue for the foreseeable future. Further agricultural development is the best option for generating increased growth in incomes, diversification of the economy, and reduction in poverty levels. West Africa's farmers need a decent return on their labour and capital if they are to continue to invest effort in further intensification of agriculture. Yet the broader global context is making such a growth pathway increasingly difficult to tread. Family farms, which make up the vast majority of holdings in West Africa, have demonstrated great flexibility and capacity to adapt to new circumstances, but adaptation has its limits.

The current global policy environment offers three interlinked opportunities for addressing the problems faced by West Africa's agricultural sector. *First*, commitment to achieving the UN Millennium Development Goals has been clearly espoused by all OECD member states. A halving of the number of people suffering absolute poverty by 2015, and the establishment of a rule-based approach for trade and financial systems are amongst the key goals to be attained. *Second,* the US and EU are both under pressure to cutback on farm subsidies. The WTO Doha trade talks provide the key arena for negotiations on farm subsidies. EU member states are also facing the prospects of enlargement to include an additional ten member states in 2004, which will force changes in the Common Agricultural Policy (CAP). Can these and other processes (such as Cotonou and the Everything But Arms (EBA) initiative) bring results favourable to poor countries in West Africa? Or will the Cairns group of major agricultural exporters be the primary beneficiaries of any cutbacks in farm subsidies and dumping by the US and EU? *Third,* current security concerns have heightened awareness of the potential link between impoverishment, resentment, global migration and risks of terrorism. There are two strategies for addressing such risks, the first involving repression and tighter

measures to protect rich nations. The second recognising the need for fairer, more inclusive patterns of social, economic and political development at national and global levels. Greater fairness would require a more equitable distribution of the burdens between rich and poor nations in adjusting to globalisation. Selling such a policy of negotiated adjustment in rich nations requires good evidence and leadership.

A wide range of initiatives and organisations are currently engaged in the field of trade, agricultural reform and promotion of Africa's economic development (*see Annex 3*). These include the search for greater policy coherence within the OECD and a quantitative analysis of the distributional implications of various OECD policies for populations in several poor countries (Brooks, pers. comm.). Achieving significant improvements in the prospects for West Africa's family farms will depend on combining work at different levels:

- Strengthening the voice of producer organisations at national and regional levels and their ability both to represent their members effectively and to articulate clearly the priorities they espouse.
- Working in OECD countries (especially the EU and US) with like-minded organisations to demonstrate the consequences of current policy on the livelihoods of many millions of farmers in poor countries, and lobby OECD governments in favour of changes to farm and trade policy measures.
- Work at global level linking actors from West African and OECD nations in the various arenas available, to provide a platform for dialogue and assessment of short and long-term consequences of current policy directions.

X. CONCLUSIONS

This scoping study has sought to describe the broad transformations underway in West Africa's agricultural sector. It has engaged in a process of discussion involving many actors within the West African region and with organisations based in OECD countries, to identify the main issues affecting future prospects facing West Africa's farmers, and the principal arenas in which progress must be made to ensure their longer term viability.

Agriculture is central to the West African region and will remain so for the foreseeable future. Further agricultural growth is essential if poverty reduction goals are to be realised. Family farms, in all their diversity, remain by far the most dominant component of the agricultural sector. Improvements to national, regional and global marketing opportunities would therefore make a major contribution to the welfare and livelihoods of many millions of people.

Family farms have been remarkably successful in generating increased food and export crop production for domestic and foreign markets. The category "family farming" covers a wide range of agricultural operations from highly market-oriented farms, closely linked into global markets, through mixed market and subsistence-based farm households, to those who are barely scraping a living from the land. Key characteristics of family farming include the close link between the structure and composition of the household and its associated farm assets and activities. These links have important implications for the choice of crop, organisation of family labour, management of investment and assets, and questions of marriage and inheritance. Adopting a threefold typology of family farms (see Section 3.2), brings a more explicit recognition of the great diversity within the sector, which needs consideration in design of agricultural policy and support measures. An understanding of the family farm and its various components should help governments better to assess the multiple values provided by this pattern of agrarian structure. While this threefold typology is valuable in distinguishing different kinds of farm household, it should be remembered that these are not watertight categories, and there may be considerable movement between categories. Such upward and downward mobility is the consequence of the interplay between economic and social dimensions, especially

the tensions between younger and older household members, and between those of different parentage. These frictions can lead to cleavages within the household and break-up of large extended domestic groups, leading to reduced resilience in the face of risks.

The weak statistical data base makes it hard to assess in detail the distributional impact of recent transformations on different kinds of farm household. However, taking cotton as an example, which is grown by some 10 million households in West Africa, it is reasonable to assume that they have all suffered the consequences of recent falls in world market prices, given the liberalisation of marketing systems and the abandonment of price stabilisation by parastatal bodies. Equally, the ups and downs of cocoa prices will have been felt by the two million or more smallholders in Ghana and Côte d'Ivoire who provide the bulk of West Africa's harvest. When devaluation of the CFA franc and anti-dumping measures led to improved market conditions for West African livestock production, animal owners throughout the region responded by investing further in this sector and intensifying production through stall-feeding and fattening activities. The widespread response to better prices suggests that all producers gained some benefit. Policy change, such as the EU Chocolate Directive, allowing reduced levels of cocoa content in confectionery sold as "chocolate", is likely to have led to a shift in benefits from cocoa producers in coastal states to collectors and processors of shea nut butter, the substitute fat used in chocolate, produced in the Sahelian region. Further work could usefully address these distributional issues in more detail.

There is growing understanding and concern amongst rural producers, producer organisations, National governments, NGO networks, and some donors about the very damaging effects of OECD trade and agricultural policy on the prospects for farmers in the developing world. The ongoing WTO negotiations provide the main forum for inter-governmental discussion and pressure group lobbying as regards future agreements on agricultural trade and domestic policy. Major imbalances in global power limit the room for serious gains by African countries within such negotiations. The only means to achieve significant progress in the opportunities facing West Africa's farmers will be through strengthening domestic pressures in OECD member states to curb agricultural handouts, cut export subsidies and address the need for policy coherence. Long-term self-interest and security concerns make such a shift in policies somewhat more "saleable" today than in the past. Adopting such a strategy would require the development of multiple partnerships with a wide range of groups, in West Africa and the OECD, and the marshalling of clear evidence of the impacts caused by OECD government policies on local livelihoods.

Work complementary to such a strategic process would include:

- Assessing the place of agriculture in general, and family farming in particular within national Poverty Reduction Strategies, as well as in broader donor policy.
- Reviewing the weight given to policy coherence in key OECD member state decision-making, particularly as it affects farmers in West Africa.
- Examining in more detail the impact of trade and agricultural policy on crops of particular importance to the West African farm sector – such as cereals, oil seeds, fruit and vegetables. This needs to address impacts on world market prices, opportunities for exports to third countries, and dumping of surplus on West African markets. Additionally, it would be valuable to assess the distributional impacts of such policy measures, as regards the different positions faced by smaller and larger farming enterprises.[17]

[17] This could be done in collaboration with ongoing work at the OECD on analysis of distributional impacts in developing countries of current OECD policies on agriculture and trade. However, the weak statistical base and limited coverage of data over time for most West African countries should be kept in mind.

- Working with ROPPA and other producer organisations to assist them in developing materials and strategies for influencing national, sub-regional and global decision-making arenas. This would include information and communication materials explaining the different trade negotiation arenas, the regulations relating to different agreements, and implications for West African agriculture.
- Strengthening coherence within West African government policy making as regards agricultural strategy, and other key fields such as decentralisation and land tenure reform.
- Describing through a series of case studies the very diverse and adaptive strategies and outcomes achieved by different family farms in various West African settings, placing these case study stories within broader processes of change and transformation of the recent decades.
- Describing through a series of case studies the nature and strategy of *les nouveaux acteurs*, now entering the agricultural sector, to outline the range of interests and perspectives they represent, including the difficulties they face and linkages forged with other forms of farm production.
- Analysis of the design and implementation of agricultural policy at national level, the processes involved in terms of elaboration, consultation, lobbying and targeting of measures. This would aid the better understanding of the political economy underlying particular national policy choices.
- Getting a better assessment of income and poverty levels in complex domestic groups, and how they have changed.

A range of international and regional initiatives already exist to explore the issues raised here. The SWAC Secretariat might best add value in the following areas:

- Consultation and providing a platform for discussion amongst stakeholders in West Africa regarding priorities for agricultural development, trade negotiations and the trade-offs involved with different options;
- Identifying key themes with West African partners for action research to highlight the implications of current trends and policy measures, distributional implications, and choices to be made;
- Working with government and civil society groups in OECD member states to push for greater policy coherence, and understanding of the global risks associated with short-term considerations of electoral politics at home;
- Feeding materials and ideas into high-level debate in global arenas, to inform the various stakeholders of the interlinkages between trade and farm policy in countries north and south, and to provide a means to build bridges between different constituencies, based on the influence, access and reputation of the SWAC.

LIST OF ANNEXES

1. Bibliography

2. List of people met and contacts made

3. Initiatives on trade and agricultural policy in the OECD

4a. "The future of family farms in West Africa. What can we learn from the long-term data?" Contribution by Michael Mortimore, 2003.

4b. "The future of family farms in West Africa. What can we learn from the long-term data?" Supporting graphs and figures, commissioned from Michael Mortimore, 2003.

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BIRBA	Athanase	FEPA-B
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KIEFFER	Julien	Groupe de Recherche Action sur le Foncier (GRAF)
KIEMTORÉ	Christophe	Impact Plus
KONATÉ	Amadou Moctar	Comité Inter Etats de Lutte contre la Sécheresse au Sahel
KOUDOUGOU	Bénoit	Consultant
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OUÉDRAOGO	Mathieu	Réseau MARP
OUÉDRAOGO	Hubert	Groupe de Recherche Action sur le Foncier (GRAF)
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PALÉ	Fréderic O	Université Ouaga
SERMÉ	Virginie	Groupe de Recherche Action sur le Foncier (GRAF)
SINA	Sidibou	Consultant
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TIÈMA	Therese	Fédération Nationale des Organisations de Producteurs (FENOP)
TONTOROGOBO	O	Ministère agriculture
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TRAORÉ	Charles	Fédération Nationale des Femmes Rurales du Burkina Faso (FENAFER-B)
ZOMAHOUN	Gilbert	
ZONGO	Mahamadou	Universite de Ouagadougou
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DUGUE	Patrick	Programme Agricultures Familiales et Mondialisation, CIRAD-TERA, Montpellier
LOSCH	Bruno	CIRAD-TERA, Montpellier
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GNISCI	Donata	Sahel and West Africa Club, OECD
DAMON	Jacqueline	Sahel and West Africa Club, OECD
HUSSEIN	Karim	Sahel and West Africa Club, OECD
IGUE	John	Sahel and West Africa Club, OECD
SCHUMACHER	Sunhilt	Sahel and West Africa Club, OECD
THIAM	Pape Demba	Sahel and West Africa Club, OECD
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		Ghana
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		Mali
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KEITA	Modibo	Cabinet d'Etudes Keita (CEK)
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SARR	Saliou	Conseil National de Concertation et de Coopération des Ruraux (CNCR)
SECK	Voré	GREEN Sénégal
SÈNE	Babacar	Journaliste
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HEALY	Sally	FCO
		British Overseas NGOs for development (BOND)
		UK Trade Network members

ANNEX 3: INITIATIVES ON TRADE AND AGRICULTURAL POLICY IN THE OECD [18]

There are several processes and initiatives underway at global and regional levels aimed at addressing issues of agricultural and trade policy, involving a wide range of actors. Some of these are linked to a particular calendar of negotiations, such as the WTO process, while others represent longer term programmes aimed at, for example, strengthening fair trade approaches in particular regions and commodities. In general, there has been heightened awareness in the last few years, regarding the impacts of globalisation and adverse effects of OECD trade and agricultural policy on developing country farmers. Thus, several governments and NGOs have been increasingly concerned to improve policy harmonisation on key issues. For example, the British, Dutch and Danish governments have pushed for reform of the CAP, in part because of its damaging effects on Southern farmers. It is argued that it makes little sense to grant substantial debt relief on the one hand, when falling world prices for key commodities empty the coffers of governments and farmers in developing countries on the other hand. There has been growing emphasis placed on raising the capacity of developing country governments and producer groups to negotiate their interests and positions more effectively at national and global levels. A number of donor governments have been providing training for developing country negotiators, as has the World Bank and WTO. So far as producer organisations are concerned, initiatives from the West African setting include support to the ROPPA from the Groupe de Bruxelles, CIRAD and Canada's UPA, as well as the African Farmers' Academy programme developed by the group APM Afrique (Agriculture Paysanne Modernisation en Afrique) based in Cameroon (see below for more details).

There is little explicit debate within WTO, Cotonou and other trade negotiations on family farms. The main issues concern macro-level measures, such as improved access to developed country markets, lesser NTBs, such as sanitary and other controls, and demands to cutback export subsidies and dumping of farm produce. There seems to be no attempt to discuss the differential impact of these various policies and practices on different forms of producer, size of farm, etc., and on overall poverty levels.

More explicit attention is paid to smaller farms within the ethical, fair trade debate, in which there is concern to ensure poorer producers benefit from enhanced trading opportunities. Attention is therefore being paid to ways of enabling smallholders to have easier access to such trade, through supply of inputs, bulk marketing, help with meeting quality standards and so on. Ethical products often rely on marketing of produce with named smallholders pictured on the package, bringing home to the purchaser the benefits for a particular individual associated with being able to sell into Western markets.

1. Inter-governmental activity

WTO negotiations *(www.wto.org)*
A series of meetings are underway in Geneva to negotiate a wide range of issues in preparation for the Cancun 5th Ministerial Meeting September 10-14th, 2003, which aims to review progress. Thus, for example, in January committees plan to cover trade in services, agriculture, the accession of Belarus, textiles, trade in information technology products, dispute settlement, and a review of the Maldives' trade policy. Agriculture constitutes a major element of the current Doha round of negotiations, with a series of special sessions of the Agriculture Committee earmarked to achieve agreement before April 1st 2003. It has been agreed that the Doha negotiations will be considered as a single undertaking, such that almost all items being discussed are part of a whole and indivisible package,

[18] This section has provided a partial listing of negotiations under way, initiatives and proposals for new projects, organisations and network working in the field of trade and development, with a particular focus on agriculture and West Africa. There are, no doubt, a range of organisations and activities which have not been included above. Further information regarding other relevant activities under way would be welcomed.

which cannot be negotiated and agreed separately. In addition, special and differentiated treatment for least developed and developing countries is meant to provide a longer time frame for implementation of negotiated agreements than for richer nations. All these linked negotiations are to end by January 1st 2005.

The current round is based on the 1986-94 Uruguay negotiations which brought commitments by WTO member governments in favour of improved market access and reduced trade-distorting subsidies in agriculture to be implemented over a 6 year period from 1995 (developing countries were given 10 years to carry these through). However, several substantial loopholes have remained, such as non-tariff measures like import quotas, as well as continued use of agricultural subsidies, including for exports.

Thus the key agricultural elements to be negotiated in the current sessions concern:

- *Market access*: to tackle various trade restrictions confronting imports;
- *Domestic farm support*: to cut subsidies and other programmes which raise or guarantee farm gate prices and farmers' incomes;
- *Export subsidies*: as a means to make exports artificially competitive.

Governments are permitted to support their rural producers but preferably through policies that do not distort trade. Special provisions exist for developing countries, which have a longer period for the implementation of measures while least developed countries do not have to reduce tariffs or subsidies. Governments can also adopt special provisions to restrict imports of particularly sensitive products, subject to strictly defined conditions (e.g. Japan, Korea and Philippines for rice). The WTO agreement also allows governments to act against dumping where there is genuine material injury to the competing domestic industry.

The Agriculture Agreement specifies certain "boxes", each containing different kinds of measures: the "green box" contains measures with minimal impact on trade, such as government services, such as research, disease control, infrastructural development, food security, direct income support, environmental and regional assistance programmes. "Blue box" measures include certain direct payments aimed at limiting production, various rural development programmes and small-scale support. "Amber box" measures are those which must be reduced, because they distort production and trade. Nevertheless, some amber measures are allowed up to a maximum of 5% by value of agricultural production for developed and 10% for developing countries. "Red box" measures are those which are forbidden.

Export subsidies are prohibited under the Agreement on Agriculture unless specified in the member government's list of commitments, which are then subject to progressive reductions over the six-year implementation period. Provisions have been agreed to help those countries highly reliant on supplies of cheap, subsidised food imports, which need temporary assistance to make the adjustments necessary to deal with higher priced imports of food. Developed country parties are meant to provide greater market access for agricultural products of particular interest to developing countries, including the fullest liberalisation of trade in tropical agricultural produce which might advance diversification away from illicit narcotics. Many developing countries argue that rich countries continue to subsidise their agricultural sectors, regardless of commitments make under the Uruguay trade negotiations, and have found a variety of other means to protect their farmers from cheaper goods produced in the South. As a result, there is considerable suspicion and hesitancy regarding the current Doha round.

Box 1. Rising political interest in trade and development: UK and Doha.

The UK Parliament's International Development Committee is currently conducting an inquiry to investigate aspects of the WTO's Doha agenda. This will include the following issues:

Agricultural reform in the context of the Doha commitments

- What impact do Northern agricultural export subsidies, and food aid, have on food security and livelihoods in developing countries?
- What should be done to ensure that Northern Governments' policies in the areas of agriculture and humanitarian assistance do not conflict with the developmental needs of developing countries?

Market access

- What impact has the European Union's Everything But Arms initiative had on trade between developing countries and the EU?
- How has the extension of preferential access to the least developed countries affected other developing countries?
- What would be the impact of reforming the EU-ACP sugar regime on developing countries as a whole, and on individual developing countries?
- What are the key barriers which developing country exporters face in gaining access to Northern markets, and what could be done to reduce these barriers?

Special and differential treatment

- How might special and differential treatment, and particularly "development box" proposals within the WTO, assist poorer countries to become food secure, and to develop their productive capacities?
- What has the experience of developing countries been in reducing or eliminating domestic subsidies, and in particular what has been the impact on the poor?

The capacities of developing countries

- What are the key constraints which developing countries face in playing a full and active part in international trade negotiations?
- What should be done to enhance the negotiating capacities of developing countries, and to ensure that they have an effective voice in international trade negotiations, and what help have developing countries received in this regard?
- What should be done to enhance the ability of developing countries to take advantage of increased opportunities to trade?

Negotiating the Cotonou Agreement *(www.acpsec.org/gb/cotonou/accord1.htm)*

Signed in June 2000, the Cotonou Agreement replaces the 25 year old Lomé Convention, and covers trade, aid and political relations between EU and ACP. Detailed negotiations, expected to last 5 years, started in September 2002, to establish tariff levels, quotas, labelling, and other issues regarding imports and exports. Under the Lomé Convention, ACP member states gained preferential trade access for exports to EU markets. Such access was non-reciprocal, and thereby recognised the substantial differences in levels of development between EU and ACP nations. Some exports were granted special rights of entry through quotas, due to their sensitivity, e.g. bananas, sugar and beef. Commodity price stabilisation measures through STABEX and SYSMIN provided a more predictable income stream for poor countries facing fluctuations in export prices. Equal status and sovereignty principles kept to a minimum the kind of conditionalities attached to other forms of development assistance.

The Cotonou Agreement introduces major changes in EU-ACP relations in comparison with the Lomé Convention, and has been the subject of serious criticism. WTO compatibility is now a key feature. Commodity price stabilisation has been closed, despite the long-term decline in world market prices and current major difficulties with commodities such as coffee. Full trade reciprocity is expected through Economic Partnership Agreements (EPAs) due to start in 2008. But such agreements are based on the theoretical benefits of free trade between countries at similar levels of economic development. Most ACP states are not in a position to compete with goods produced elsewhere and

will never be able to build up domestic production in many sectors, especially where they face subsidised imports. Many governments will also lose substantial fiscal revenues given cuts in tariffs. Well-established large companies are considered those most likely to benefit from opening up of free trade areas. There is also very unequal capacity to negotiate and be properly represented at the large number of trade talks now underway in a set of complex negotiations.

The Economic Partnership Agreements and the Everything But Arms initiative mean that EU tariff barriers are becoming of less and less importance for African exporters. However, those countries which formerly had a particular preferential trading relationship may well find their position adversely affected in relative terms. Also certain commodities to date have been excluded from the agreement – sugar, bananas, meat - since these have powerful producer unions in the EU. NTBs remain of considerable importance since they are defined by Northern countries according to their own norms and standards, taking little account of whether these are realistic or appropriate to developing country circumstances. Many consider that such NTBs are often a means to introduce a disguised form of protectionism. Other areas for further negotiation include impacts of dumping, the fluctuations and uncertainty of commodity prices, weak infrastructural development within ACP countries, and heavy reliance on marketing through a few major powerful buyers.

While opening up easier access to Northern markets is clearly of importance for broadening opportunities available to Africa's farmers, protection of domestic markets from unfair competition is also of key strategic importance for the future development of agriculture in much of the developing world. Problems associated with dumping and highly subsidised systems of farming in the North allow foodstuffs to be sold in third markets at prices well below cost. Certain crops have no chance of developing effectively unless they receive greater levels of protection from cheap imports (Koning, 2002).

In terms of process, the Cotonou Agreement also argues for greater participation in preparatory processes to ensure more effective representation of agricultural and farmers' interests in negotiating positions. Thus, there is starting to be greater discussion, feedback, representation of diverse interests, increased transparency in the negotiation process, and strengthened alliances between different civil society and farmers' organisations.

The EU encourages ACP states to negotiate and sign free trade agreements collectively in regional economic groupings to promote regional economic integration and limit the number of individual agreements. The poorest states comprising 39 LDCs are not obliged to sign an EPA to retain present levels of trade access to EU markets and can maintain current preferential status without reciprocal access.

Agricultural Initiative to Cut Hunger in Africa (AICHA) *(www.ifpri.org/themes/aicha.htm)*
USAID's new Agricultural Initiative to Cut Hunger in Africa involves investments to support agricultural growth in East, West and Southern Africa. Each regional action plan will link to and harmonise with national action plans in selected high-potential countries that are also expected to serve as nodes of agriculture-led growth within their sub-regions. All action plans will describe the process by which investment priorities will be developed, fine-tuned, and acted upon. USAID describes the action plans as documents that will include a 15-year vision, specific programmatic thrusts for a five-year planning cycle, and annual work plans and targeted outputs. They are expected to be "rolling" planning documents that will also provide monitoring and evaluation information in accordance with a results framework established in the first action plan. Each plan will assess the likely impacts of the proposed investments on: a) overall economic and agricultural growth; b) agricultural trade; c) intra-regional trade; d) spill-over effects through intra-regional linkages in commodity and factor markets; and e) regional growth, development, and hunger and poverty reduction (IFPRI, 2002).

New Programme for Africa's Development (NEPAD) *(www.nepad.com)*
The New Programme for Africa's Development stems from the merging of two initiatives: President Mbeki's Millennium Africa Plan (MAP) and Wade's Plan Omega. It was launched in October 2001, and agreed by the African Union at its meeting in summer 2002. The NEPAD secretariat has been set up in South Africa. It is unclear yet where NEPAD will fit within the range of related initiatives and negotiations currently underway. It comprises a set of commitments, as contained in the NEPAD document, under which African governments pledge themselves in favour of better governance, in return for G8 countries opening up their markets, increasing aid, providing further debt relief and promoting private investment.

The NEPAD document runs to 57 pages and 207 paragraphs. Agriculture is dealt with in several places. The section directly concerned with agriculture covers six paragraphs. The analysis is weak and out-dated. It emphasises the inadequate and unproductive nature of most African farming systems, and their vulnerability to external shocks such as climate. It rightly argues that higher incomes in rural areas would provide a valuable dynamic to generate further economic growth and diversification. However, there is no reference to the enormous importance of increasing effective demand for food to encourage investment in agriculture by Africa's farmers. The emphasis is on supply-side constraints rather than acknowledging that when the price is right, African farmers intensify and raise yields very considerably. Since climatic uncertainty is identified as a key constraint, "governments must support the provision of irrigation equipments and develop arable lands when private agents are unwilling to do so". This would seem to indicate a return to large-scale state-run irrigation projects.

Proposed actions to improve the agricultural sector include:

- Increasing security of water supply for agriculture by establishing small-scale irrigation facilities and know-how;
- Improved land tenure security under traditional and modern forms, and land reform as necessary;
- Fostering food security, early warning systems, networks and storage mechanisms;
- Enhanced access to credit especially for small-scale, female farmers;
- Addressing donor fatigue and encouraging their re-engagement with high-profile agricultural projects;
- Improving quality to meet foodstuffs standards required in international markets and thereby gain greater access to markets;
- Support investment in research on high-yield crops and storage methods;
- Build national and regional capacity for multilateral trade negotiations, including food sanitation and agricultural trade.

NEPAD notes the importance of promoting African exports through tackling barriers in international trade, encouraging cross-border trade and regional trade agreements, active marketing of African produce, and strengthening capacity in negotiations, with active participation in WTO and other processes. NEPAD also seeks a forum in which developing nations can call collectively for structural adjustment by developed countries in those industries in which natural competitive advantage now lies with the developing world. The document notes the need for diversification of products and increased value added, without tariff escalation in rich countries blocking export opportunities. The option of setting up a preferential trading system within the continent is proposed as well as to maintain and further strengthen benefits to be gained from the GSP, the Cotonou Agreement, the Everything But Arms initiative, and the Africa Growth and Opportunity Act.

NEPAD has been subject to criticism on various grounds, which include:

- Lack of engagement with African citizens. The emphasis to date has been for the presidents of several countries to conduct high-level discussion with G7 leaders, rather than consulting and engaging with their populace.
- Taking a top-down, centralised approach, based on promoting major capital investment, led by government. There is little or no mention of decentralised approaches to decision-making, and resource management, nor recognition of why such top-down approaches failed in the past.
- Heavy emphasis on a neo-liberal market agenda. Many argue that NEPAD provides nothing new, but rather is fully supportive of the Washington-consensus view regarding the superiority of the market economy, and the self-evident benefits for all from globalisation and trade liberalisation.
- Lack of focus or priorities. The document includes everything, but with little sense of prioritisation. It also sends out mixed messages. In the agricultural discussion, while there is welcome support for small-scale and female farmers as being key actors in the agricultural sector, there are also calls for the "modernisation" of agriculture involving consolidation of holdings, mechanisation, and introduction of biotechnology.

Mid-term review of the Common Agricultural Policy *(htttp://europa.eu.int/pol/agr/index_en.htm)*
The European Commission is currently revising its proposals for the CAP mid-term review following the various summit meetings between EU heads of state. CAP review has been prompted by various factors, such as EU enlargement, with 10 candidate countries due to become members in May 2004, and the ongoing process of WTO negotiations which have agriculture as a major focus. EU enlargement will bring in an additional 70m people from countries in most of which agriculture remains a very significant sector. Thus, for example, Poland is estimated to have 3.5 million farm households. The CAP budget would have to increase very significantly if all the existing agricultural supports were offered to farmers in candidate countries. A gradual introduction of direct CAP payments has been proposed to phase-in access to support, with complete access to be achieved only in 2013. By this time, it is expected that the current level of farm support will be much reduced. The main changes to the CAP will be to:

- Decouple direct payments, and cut intervention prices for cereals, thereby reducing incentives to over-production;
- Pay farmers for achieving environmental standards, including farm animal welfare and food safety, with support to put land in permanent "set-aside";
- Reform the dairy sector;
- Cap the maximum sum which a farm can receive;
- Identify new options for rural development support.

However, there remain significant differences between EU member states regarding the speed of reform. Following the Copenhagen Summit in December 2002, the European Commission is preparing a revised programme for CAP reform that tries to satisfy divergent interests within the EU member states. As noted by French Minister of Agriculture Hervé Gaymard "France favours limited reforms. It does not subscribe to the view that the CAP and agricultural policies constitute obstacles to the development of poor countries and for this reason should be eliminated or, at the very least, greatly modified." (*Financial Times* Jan 8th, 2003)

International Initiative on African Agriculture
This proposed programme of work, led by the French Ministry of Foreign Affairs, aims to strengthen the involvement of the donor community in favour of NEPAD, through collaboration between political and private sector actors in the field of agriculture, North and South. It aims also to reinforce African

expertise in the analysis of agricultural, economic and trade policy and practice, and identify how to strengthen farmers' engagement in processes of negotiation. It recognises that African governments do not have the means to subsidise their agricultural sector, a sector which is subject to increasingly harsh competition. The PRS approach has not taken sufficient account as yet of the heavy dependence of most poor people on the agricultural sector. A series of networks will be supported to gather together a wide range of different people to discuss market-related topics and facilitate contacts between private sector actors. A series of different kinds of training programme will be developed. The OECD is proposed as one possible organisation to co-ordinate the running of this programme, once set up.

Agriculture and Poverty Reduction Strategies *(http://worldbank.org/poverty/strategies)*
The Poverty Reduction Strategy (PRS) process and Poverty Reduction Strategy Papers (PRSPs) have become a central plank in donor relations with many developing countries, such strategies being a condition for debt relief under the HIPC programme. The PRSP now constitutes the main framework for discussion of aid priorities and national budgetary allocations. However, some concern has been expressed regarding the focus of most poverty reduction strategies on provision of health and education services, the lack of attention paid to productive sectors of the economy (especially agriculture), and neglect of constraints at international and global levels which hinder more productive and sustainable livelihoods for poor people. Almost all strategies refer to the rural poor as a homogenous group, failing to recognise their considerable heterogeneity. Little information is provided on important factors underlying rural poverty, such as access to land, ethnicity and gender. There are also major gaps in understanding rural poverty (Proctor, 2002).

OECD Research on Doha and development (www.oecd.org)
The OECD Council has identified work in support of the Doha Development Agenda as one of its current priorities. The contribution of agricultural policy reform and trade liberalisation to further development of non-member economies is an important element of this priority activity. This project will examine the effects of global agricultural trade reform on developing countries, focusing especially on the implications of reform for poverty alleviation, structural adjustment and economic development. Three kinds of questions motivate the analysis. First, what are the potential economic effects, both economy-wide and for various categories of rural and urban households? Second, what are the likely changes in production, consumption and net trade of agricultural goods? Third, what structural adjustments are likely in the agricultural sector? This latter question subsumes a number of specifics including potential implications for: factor intensity, especially the labour intensity, of farm production; the number of farms/farmers and the allocation of production by farm size category; and, the level and composition of farm household income. Initial work will be carried out to examine such impacts in the case of Brazil, with extension of the methodology elsewhere at a later date (i.e. Malawi). Initial results will be debated at the OECD Global Forum on Agriculture in December 2003.

Ethical Trade Initiative (ETI)(www.ethicaltrade.org)
This joint alliance of companies, NGOs and trade unions works together to implement codes of conduct for good labour standards. Its aim is to ensure that the working conditions of workers producing for the UK market meet or exceed international standards. It works through pilot projects, for example, horticulture in Zimbabwe, wine production in South Africa and banana production in Costa Rica. Lessons learnt from pilot projects are published in the ETI Workbook (available to members only) and other information, dissemination and research are also conducted. The membership comprises 29 companies (which include four major supermarkets and retailers such as Marks & Spencer's, Debenhams and Next); four trade unions including those for garment workers and food workers; and fifteen NGOs which include many of the major UK development charities such as OXFAM and Save the Children. Its main focus in the past has been the food, clothing and footwear sectors but this is expanding to include other retail sectors. It looks to like-minded organisations in Europe and the USA to share information and to support the implementation of ethical trading worldwide.

Fair Trade Initiatives (www.fairtrade.net)
One example concerns the Max Havelaar Foundation which aims to provide market access at fair and sustainable conditions for products grown by farming co-operatives and agricultural workers in disadvantaged regions of the South. As a member of Fairtrade Labelling Organisations International (FLO), it also guarantees that products sold with their label are produced and sold in accordance with international criteria of fair trade. Products which bear the Max Havelaar label include bananas, coffee, tea, honey, cocoa, chocolate, sugar, orange juice, flowers and rice.

2. Producer organisations

Via Campesina (http://ns.rds.org.hn/via)
Via Campesina is an international movement which co-ordinates peasant organisations of small and middle-scale producers, agricultural workers, rural women, and indigenous communities from Asia, Africa, America, and Europe. (http://ns.rds.org.hn/via). It is an autonomous movement, independent from all political, economic, or other denominations. Via Campesina is organised in eight regions as follows: East Europe, West Europe, North East and South East Asia, South Asia, North America, the Caribbean, Central America, and South America. There will soon be other regions organised in Africa.

Its origins go back to April 1992, when several producer leaders from Central America, North America, and Europe got together in Managua, Nicaragua, at the Congress of the National Union of Farmers and Livestock Owners (UNAG). In May of 1993, the First Conference of Via Campesina was held in Mons, Belgium, where it was constituted as a World Organisation, and its first strategic guidelines and structure were defined. The Second International Conference was held in Tlaxcala, Mexico, in April, 1996, which was attended by 37 countries and 69 organisations in order to analyse a series of issues that are of central concern to small and middle-scale producers, such as: food sovereignty, agrarian reform, credit and external debt, technology, women's participation, rural development and others.

The principal objective of Via Campesina is to develop solidarity and unity in the diversity among small farmer organisations, in order to promote economic relations of equality and social justice; the preservation of land; food sovereignty; sustainable agricultural production; and an equality based on small and medium-scale producers. In order to achieve these objectives, Via Campesina has defined its own strategies among which are the following:

- The articulation and strengthening of its member organisations;
- Influencing power and decision-making centres within governments and multilateral organisations in order to redirect the economic and agricultural policies that affect small and middle-scale producers;
- The strengthening of women's participation in social, economic, political, and cultural matters;
- The formulation of proposals in relation to important issues such as agrarian reform, food sovereignty, gender, trade and investment, and others.

UPA-DI, Canada *(www.upa.qc.ca/cdi)*
The Union des Producteurs Agricoles (UPA) of Canada established in 1993 a unit focusing on development issues aimed at supporting peasant agriculture around the world. Its principal areas of intervention are:

- Supporting the family farm as the key to more sustainable agriculture;
- Supporting farmer organisations;
- Strengthening collective systems for trade and marketing;
- Training activities;
- Affirming the role of women in farm production.

UPA-DI has a new project in six West African countries to strengthen leadership capacities in producer organisations and their ability to influence international agreements in the context of challenges in international trade and the current Doha round of negotiations in the context of the upcoming international meeting in Cancun (PADCLA). The project aims to help the leaders of producer organisations to participate in the next round of WTO negotiations in Mexico. This year, UPA will initiate meetings with government representatives of the different West African countries and identify a dozen representatives who can work with civil society organisations to prepare a sub-regional meeting on international agricultural trade in mid-2003.

Agriculteurs français et développement international (AFDI) (www.afdi-opa.org)
This association aims to inform French farmers of the needs of farmers in developing countries, and to establish relations between these groups so that they can get to know each other better, and provide various forms of support. A major part of AFDI's activity takes place in Francophone West Africa and provides twinning between regional farmer groups in France with their equivalents in West African countries.

3. Research groups

CIRAD (www.cirad.fr)
The Centre de Coopération Internationale en Recherche Agronomique pour le Développement is based in Montpellier. Its mission is to contribute to rural development in tropical countries through a combination of research, training, and provision of scientific and technical information. The main fields covered include agronomy, veterinary science, forestry and agro-food studies. With researchers based in 50 countries, the organisation has seven departments and 28 programmes. CIRAD-TERA has a programme on Agricultures Familiales et Mondialisation, which aims to promote an action-research approach to understanding and following the processes underway as they relate to impacts of globalisation on family farming in various parts of the world, and to provide support to the different actors engaged in negotiations at local, national and international levels. CIRAD is developing collaborative relations with ROPPA in West Africa, and proposes to provide support to a series of activities to be identified over the next few months. They are likely to include the establishment of a monitoring system to provide good quality information on changes within the agricultural system, support for engaging in policy analysis and influence, and investigating ways to increase levels of productivity and performance within family farms. CIRAD-TERA is also supporting the Université Paysanne Africaine (African Farmer's Academy) which provides training and support to producer organisations in Africa, to enable them to understand and analyse the changes under way in global agriculture, to develop strategies to meet the needs and priorities of their members, and to develop negotiating skills to ensure greater effectiveness in a variety of arenas.

The European Centre for Development Policy Management (ECDPM) *(www.ecdpm.org)*
Based at Maastricht, the Netherlands has been working on EU-ACP relations since 1986. It is an independent foundation whose capacity building activities aim to improve co-operation between Europe and countries in Africa, the Caribbean and the Pacific. Its overall strategy is to help make ACP-EU development policies work more effectively. It focuses on four themes:

- ACP-EU trade relations;
- Political dimensions of partnership;
- Actors of partnership;
- Donor reform.

The ECDPM has recently published a "Cotonou Infokit: The New ACP-EU Partnership Agreement" which provides detailed and critical coverage of the Cotonou Agreement, its various components and risks associated with the current negotiation processes at www.oneworld.org/ecdpm.

The International Food Policy Research Institute (IFPRI) *(www.ifpri.org)*
One of the CGIAR research centres, IFPRI is based in Washington, and carries out research on policy measures to help meet the food needs of the developing world, in a sustainable fashion. Research focuses on economic growth and poverty alleviation, and sound management of the natural resource base on which agriculture depends. A range of research activities address issues of African agriculture and impacts of globalisation. A recent study addresses directly small-scale farming in Africa, and argues that support to the small farmer is essential if there is to be "an end to hunger in Africa" (IFPRI, 2002). Work on the impacts of globalisation on the agricultural sector is also under way in other parts of the world, notably South Asia.

Groupe de Bruxelles
The Brussels Group brings together ROPPA and a range of European partners, including GTZ, Swiss Cooperation, SOS Faim and Inter-Réseaux. The Group was launched in 2000, and capitalises on a series of North-South initiatives to support peasant associations and "platforms" in West Africa which took place between the 1970s and the 1990s. Since its inception, the Group identified family farming as the central concept for its work, and provided useful contributions for the definition of that concept. The Group aims at supporting the family farming "vision" of agricultural production on the one hand, and at promoting its adaptation to respond to new challenges on the other. In this context, building knowledge and understanding on family farming is seen as a priority. This aim is to be achieved through, among other things, the development of "rural identity cards", i.e. of tools providing a wide range of users with key information on family farming in different countries (access to resources and markets, internal organisation, difficulties and constraints, etc.).

4. Non-governmental Organisations (NGOs)

An increasing number of NGOs are working in the interlinked fields of trade, development, and debt relief. OXFAM is amongst the most active within the UK and has developed a strong policy department conducting both research and advocacy activities aimed at influencing the WTO negotiations and CAP reform. A range of publications have recently been made available analysing the links between trade negotiations, farm subsidies in Europe and North America, dumping of commodities on developing country markets and growing impoverishment of farmers in the South (see main bibliography for details). Other major NGO actors include Action Aid, CAFOD, and Christian Aid. UK NGOs working on development co-operate in a variety of ways, including through the British Overseas NGOs for Development (BOND) grouping, which helps organise several collective activities, such as consultations with government, discussion of new initiatives such as NEPAD, and joint advocacy programmes. Similar co-ordination and joint campaigning on key development issues can be found in other European countries, such as Coordination-sud in France (www.coordinationsud.org).

Inter-Réseaux (IR) (http://inter-reseaux.globenet.org)
IR brings together three networks working on rural development, and linking North and South. It thus provides a space for debate and exchange of experience related to strategies for more equitable rural development in poor countries, with particular focus on supporting and promoting the initiatives of farmer organisations. IR publishes a regular bulletin – Grain de sel – which is disseminated to 3,000 largely African readers. Current working group themes include evaluation of support measures for farmer organisations, mobilising local resources for increasing financial autonomy amongst farmer organisations, agricultural extension, and issues concerning aid to the agricultural sector. IR is a member of the Groupe de Bruxelles, and has maintained strong links with ROPPA.

Solagral (www.solagral.org)
This association has a range of activities focused on promoting access to incomes and productive opportunities, access to food, and conservation of the natural resource base. Solagral provides the hub for a series of networks bringing together researchers, trainers, NGOs, farmer organisations, government officers, and others in national and international groupings. Networks address issues such

as biotechnology, international trade, and environment. Current campaigns include a call for reform of the CAP, discussion of strategies for the Cotonou Agreement negotiations, and intellectual property rights surrounding biodiversity and GMOs. A series of information activities complement their work. Until recently, Solagral has been publishing a regular review of data on livestock and meat trade and marketing in the West and Central African region. This came to an end in December 2001. Such a programme helped monitor changes in meat export practices by European and other nations and their impact on market conditions in the West and Central African region.

NGO networks

A set of interlocking networks exists in Europe and North America, which bring together development NGOs and campaigning organisations seeking to argue for fairer trade, improved access to markets and an end to production-related subsidies for developed country farmers. Many of these were involved in the Jubilee Debt 2000 initiative calling for debt cancellation in the late 1990s. Having achieved relative success with the debt campaign, they have now turned their attention to the trade and globalisation agenda. Principal objectives for these groups include:

- Improved access to rich country markets for developing country farmers, including tariff reductions for processed commodities, and cutbacks in red tape and other NTBs;
- Abolition of production-related subsidies under the CAP and the US Farm Bill;
- Abolition of agricultural export subsidies and rights for developing country governments to protect their own farmers, especially against dumping;
- Strengthened capacity for trade negotiation.

In some cases, there is a parallel set of campaign objectives to be achieved within OECD countries, given the recognition that many small farmers in the North are in crisis. Hence, calls are being made for a shift in agricultural support measures from large to smaller farmers, a shift to more localised systems of farm production and marketing, which would reduce the central position of supermarket buyers, establishing a fair-trade system for certification of produce, and greater transparency in distribution of state subsidies to farmers and agro-processors.

Box 2. EU Trade Network (ETN)

This brings together European civil society organisations working on trade at national, international or European level, such as NGOs, trade unions and producer organisations. ETN membership includes not-for-profit organisations working on research, public education and awareness raising as well as on advocacy and lobbying. ETN member organisations work towards the common objectives of sustainable development and poverty reduction. They actively promote trade policy that is just and conducted in an open, transparent and inclusive manner, so as to incorporate the interests of civil society. The "added value" of the ETN is to provide a forum for sharing information on research and awareness raising actions and strategising for lobbying activities towards the EU institutions and governments on issues of common interest. These issues are the different aspects of trade and trade-related areas, sustainable development, and poverty reduction, as well as transparency and democracy in EU trade policy-making. It meets 3-4 times a year, plus exchange and networking through electronic means. (ETN Mission Statement, April 2002). Key issues the ETN plans to discuss in future include:

- How will world markets in agricultural produce be influenced by the increasing importance of China on global trade?
- Impacts on EU policy from absorption of 10 candidate countries as from May 2004, each with substantial number of farmers, hoping to benefit from CAP measures.

5. Groups in the US

The Institute for Agriculture and Trade Policy (IATP) (www.iatp.org)
Seeks to promote resilient family farms, rural communities and ecosystems around the world through research and education, science and technology, and advocacy. Based in Minneapolis, it supports a range of information, research and advocacy activities (such as Ag Observatory, which lists a news archive on topical issues).

Africa Trade Policy Working Group (http://Afjn.cua.edu)
Provides a focus for many US groups wanting to link with other NGOs to lobby US government, Senate and Congress on African trade, development and aid issues. Their emphasis is on human rights, economic justice and environmental sustainability. A recent campaign has argued for strengthening rights of African smallholder farmers in relation to biodiversity, to ensure that plants, crops and other agricultural genetic resources should not be patented. They present a critical analysis of the US government's Africa Growth and Opportunity Act (AGOA). They seek to promote ethical approaches to investment, and lobby against punitive measures taken against nations seeking to gain access to affordable medicines for AIDS management, in contravention of international patent protection. There is specific discussion of the role of smallholders under the AGOA, and the contradiction within the AGOA text which argues in favour of industrial agriculture being the way forward. The Africa Faith and Justice Network and the Washington Office on Africa are both active members of the above.

Africa Policy Information Center (www.africapolicy.org)
A non-profit educational organisation with the aim of widening policy debate in the USA around issues affecting grassroots African interests. APIC facilitates linkages between the Washington policy arena and the American public and others concerned with US policy towards Africa. It is the educational affiliate of the Washington Office on Africa, and works to:

- Identify critical policy issues in US-Africa relations;
- Bring to the policy process diverse perspectives from Africa and the US;
- Disseminate information and analysis to a broad cross-section of the American public.

ANNEX 4A:

THE FUTURE OF FAMILY FARMS IN WEST AFRICA
WHAT CAN WE LEARN FROM LONG-TERM DATA?

- CONTRIBUTION BY MIKE MORTIMORE -

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Note:

All Figures and Graphs referred to in the text are contained in Annex 4b attached.

Introduction

Continuity is a strong feature of West African social and economic organisation and activity. Therefore it is certain that the directions taken in future will be rooted in the past and present. Smallholdings or family farms have until now provided an overwhelming proportion of agricultural output, and until quite recently employed the bulk of the populations of all West African countries. To depart from a smallholder model of agricultural development, therefore, would be to introduce a major discontinuity into the trajectory of agricultural development, with many unforeseeable consequences. However, small-scale family farming which has supported West Africans for thousands of years may be newly vulnerable under conditions of open, competitive global markets and processes of globalisation which transfer economic advantage to the rich nations.

Since the end of the colonial era (early 1960s), long-term data series have evolved relating to many critical parameters of development. The purpose of this preliminary study is to examine some of the series relating to agriculture, with a view to exposing major strengths (or weaknesses) of the "family farming sector" (i.e. smallholder farming and livestock keeping systems). It is a premise that knowledge of the evolution of these systems – in the 40 years that have now succeeded the ending of colonial rule – is a necessary prerequisite for identifying appropriate policies for the future.[19]

Data collection in tropical Africa has tended to lag behind some other parts of the world both in terms of quality and of quantity. Some of these deficiencies, with experience, have been reduced or eliminated, but there are still problems with some of the data series. It has been customary in some quarters to dismiss such data as worthless and to rely instead either on popular interpretations of change, based on "expert opinion" and anecdotes, or on micro-scale studies which, although more accurate, are uneven in coverage and perhaps unrepresentative. The following discussion does not ignore the existence of data problems, particularly in long series, but accepts the fact that, for good or ill, such data will be used to make a case for alternative policies. It is worth asking what they can tell us about the performance of the "family farming sector" during the past 40 years, while accepting that like any other source, they offer a narrative that requires critique, contextualisation, and confirmation from alternative sources.

The following themes are addressed:

- The case against family farming: increasing food imports and failing agricultural exports;
- Variability and trends of change (rainfall, terrestrial environment, political economy);
- Demographic growth and the evolution of the agricultural population;
- Land development: investing in land use transformation;
- Food sufficiency: meeting domestic demand;
- Factor efficiency: evidence of intensification;
- Price incentives and competitiveness;
- Smallholder livestock production.

The case against family farming

In economic terms, the case against the agricultural sector, and, by implication, against smallholder farming in West Africa, rests mainly on two foundations: high and increasing levels of dependency on imported food, and a failure in several countries to maintain exports at the levels achieved in the 1960s. Using a long-term approach, what do the data tell us? Are such conclusions valid as a judgement on the economic performance or overall capability of family farming?

[19] The data used here are derived from the FAO Database (http//apps.fao.org), which cover the period 1961-2001 in annual series, supported by selected data from the World Bank Africa Database, 1965-1995. All findings are provisional. Resolution of certain problems of definition and interpretation awaits clarification.

Food imports

We have no data for food imports separately from total imports of agricultural products, so these values must be taken as proxies for food, not an unreasonable assumption when considering broad trends.

- Imports by value show increasing trends over the period, 1961–2001, as a whole (**Fig. 1**). In general, there were rapid and accelerating increases until the early 1980s, followed by falls: in some countries – notably Nigeria – dramatic ones. By the 1990s, increases had resumed, generally to levels higher (in nominal terms) than those of the early 1980s.[20]
- It is not practicable to convert these values into real terms owing to the lack of a generally applicable deflator. However, in per capita terms, the increases are far less striking (**Fig. 2**), with the exceptions of Senegal and Côte d'Ivoire, which since the 1980s have been an order of magnitude higher than the others. Nigeria's much-maligned tendency to import food was brought under control so effectively that its imports per capita fell below those of all the other countries for six years, and remain on a par with those of Ghana, Mali and Niger.
- From the uneven trajectories may fairly be deduced that the primary determinant was policy, acting on the demand for imported food. Nigeria is the most conspicuous example. In the Sahel countries, decisions to import food aid were forced on governments during drought-induced scarcities. During the 1980s, most countries introduced structural adjustment programmes or otherwise intervened. In January, 1994, the CFA francwas devalued by 50%.
- A closer look at three well-known food importation narratives (wheat in Nigeria, meat in Côte d'Ivoire and rice in Senegal) confirms this role of policy (**Fig. 3**). In Nigeria, wheat imports (and also those of rice) were brought under strict control by the Babangida government in 1986, but later relaxed. In Côte d'Ivoire, the dumping of European Community meat is said to have undermined domestic production until a sharp decline after 1991; devaluation confirmed this fall in 1994. In Senegal, more or less continuous policy support for the importation of rice (which many Senegalese prefer to domestically produced rain-fed cereals) produced a consistent upward trajectory, accelerating slightly during the 1990s.

Agricultural exports

Rising trends in food imports of West African countries (which are, of course, consistent with world-wide growth in food commodity trading) should give cause for concern at the macro-economic level only if national food sufficiency is a policy objective or (given open market policies) if exports are insufficient to pay for them. In an absence of strong non-agricultural export sectors this means exports of the traditional crops (cocoa, coffee, palm oil/kernels, cotton, groundnuts) to markets outside Africa. Revival of agricultural exports has been advocated in influential donor circles as a prime strategy for sub-Saharan countries.

Among the six countries considered here, Nigeria ceased to depend on agricultural exports for its major revenues as long ago as the 1970s, on account of its oil exports, and Niger enjoyed a short-lived uranium boom during the 1970s. In both countries, governmental concern at rising dependency on food imports (in Niger, much of it in the form of food aid) led to food sufficiency being adopted as an agrarian policy from the later 1970s to the early 1980s (Hamadou, 2000b; Mustapha and Meagher, 2000).

- Only Côte d'Ivoire (**Fig. 4**) sustained export growth consistently throughout the 40 years, and this achievement was mainly due to the performance of cocoa, whose exports increased tenfold from less than 100,000 in 1961 to a peak of more than 1,000,000 tons in 1999–2000. Cocoa prices performed better on the whole than those of other West African export crops.

[20] Note that values for Nigeria are shown divided by 10, to reduce scale disparity.

- Ghana's cocoa exports (**Fig. 5**), however, fell erratically until the 1980s, and afterwards recovered, but remain about one-third down on the level achieved at the beginning of the period (c.250,000 compared with c.400,000 tons). The link with Ghana's well-known macro-economic policy failure and recent recovery is suggestive.
- The three groundnut producing countries (Nigeria, Senegal and Niger) all experienced a collapse of exports of nuts following the Sahel Drought in 1972–74. Thereafter, Niger (**Fig. 6**) followed Nigeria (**Fig. 7**), where exports never recovered, while Senegal (**Fig. 8**), whose economy depends on groundnuts to a greater extent than that of either of the others, survived, as an exporter of oil. This was due to a policy priority of adding value before export. Groundnuts have not ceased to be grown in Niger and Nigeria. Rather, a voracious domestic demand for both oil and nuts, fuelled mainly by the impact of Nigerian oil revenues on personal incomes, through urbanisation and economic growth, offered better prices than exporters could pay.
- Mali depends heavily on cotton exports (**Fig. 9**), and notwithstanding the vicissitudes of drought, strongly interventionist policies in the cotton zone of southern Mali secured a measure of continuity over the period, though growth in exports failed after the mid-1970s.
- Nigeria's complex patterns (**Fig. 7**) show, overall, the slump which followed the loss of global markets for groundnuts, cotton and palm oil/kernels after the early 1970s. Drought hit cotton as well as groundnuts, and thereafter cotton exports were also affected by strong domestic demand. There was a great deal of investment in textile mills during the 1960s and 1970s. Nigeria now exploits regional markets for cotton goods. Palm produce similarly has been diverted to a prosperous and growing domestic market. Nigeria's cocoa exports were sustained, and it may be suggested that factors in the relatively strong performance of cocoa *vis-à-vis* other export crops are the absence of a strong domestic market, the long-term investment cycle of tree crops, and the beneficial interactions of trees with annual crops in forest farming systems.
- Livestock exports to other countries in the region are particularly important in Niger and Mali, but have not been traced through this summary statistical exercise.

See in Annex 4b:
Fig. 1 Total agricultural imports by value
Fig. 2 Total agricultural imports (US$/capita)
Fig. 3 Selected food imports: Nigeria, Côte d'Ivoire, Senegal
Fig. 4 Cocoa beans and coffee bean exports: Côte d'Ivoire
Fig. 5 Cocoa beans and coffee beans exports: Ghana
Fig. 6 Cotton, groundnut, and groundnut oil exports: Niger
Fig. 7 Cocoa beans, cottonseed, groundnut, palm oil and kernel exports: Nigeria
Fig. 8 Groundnut and groundnut oil exports: Senegal
Fig. 9 Cottonseed exports: Mali

Even without a systematic analysis of policies and their impact at the national level (which is beyond the scope of this survey), our review of long-term trends in agricultural trade offers little or no evidence of any limitations in the productive *capability* of family farming, but plenty of suggestive evidence that *policy and pricing* is a prime determinant of performance. A second determinant, most important in the Sahelian sub-region, is drought, a factor which affects output episodically, whether from family farming or from alternative systems of production.

We conclude, therefore, that export and import of agricultural commodities is more or less entirely at the mercy of global markets and national policy (in turn driven by global trends and the policies of donors). On the basis of past performance, export agriculture offers only limited scope for revival. (The competitive success of Côte d'Ivoire in certain crops will be difficult to scale up to regional level given the sensitivity of global prices to risk of glut.) This brief review of agricultural trade does not offer a valid basis for evaluating the capabilities, either past or future, of family farming as such. Such capabilities are suggested more strikingly by domestic agricultural performance, to which we now turn.

Variability and trends of change (rainfall, terrestrial environment, political economy)

First it is necessary to review long-term trends in the climatic and demographic variables. Approximately half of the population of West Africa lives under seasonal climatic regimes (Sahelian, Sudanian or sub-humid savanna drylands) that combine some degree of aridity with variability in the amounts of rainfall received during the growing season. Although variability also affects the humid zone, where rainy seasons are more extended, the consequences are less drastic for livelihoods. From the 1960s to the 1990s a prolonged downward trend affected rainfall in the West African drylands, with a proportionate increase in the frequency of drought (Badiane, *et al.*, 2000; Hulme *et al.*, 2001; Mortimore, 2000). This is illustrated in the recorded rainfall at Kano, Nigeria and Zinder, Niger (**Fig. 10**). Both variability and decline have profound implications for biomass productivity, which depends on rainfall, and supports farming and livestock-based livelihoods.

See in Annex 4b:
Fig. 10 Annual rainfall, Kano (upper) and Zinder (lower), with 5-yr mean, 1916–1999

Environmental degradation in the forms of soil erosion (by water or wind), soil nutrient 'mining', deforestation, salinisation in irrigated areas and industrial or waste pollution in rapidly growing urban areas are claimed to have reached unsustainable or dangerous levels in West Africa (Oldeman and Hakkeling, 1990; UNEP, 1994). Notwithstanding a critical debate about process, scale, and definition, these claims have stuck, at least in the orthodoxy driving policy at national or international levels. While the blame for many degradational processes is usually placed on small farmers, from an individual's standpoint, environmental change is largely exogenous and out of his/her control. This issue of agency is an important one needing clarification.

Since the era of independence (1957–60), economic policies at state level have vacillated in many West African countries, reflecting both political ideology and shifting fashions among development economists and advisors. It is not generally appreciated outside the region how significant such swings could be, because of the persistence of a stereotype of "subsistence" farming in more or less closed systems. In many countries, the 1960s were dominated by essentially "colonial" policies that relied on maintaining agricultural exports to global markets for a large share of government revenues. Under current orthodoxy, a prioritisation of industrialisation led to a down-sizing or neglect of the agricultural sector, especially where valuable mineral exports came on stream in the 1970s (e.g. oil in Nigeria and uranium in Niger). This often led to unfavourable pricing for primary producers. In response to declining food sufficiency, some governments responded by promoting food production, often with subsidies. These proved financially unsustainable, more especially where falling commodity prices hit the export sector. Structural adjustment programmes imposed at the behest of international financial institutions, with little regard for shocks or unwanted side-effects, led to a very difficult period for livelihood building from the 1980s. Since then there have been further changes, continuing the instability in some countries. Prominent examples were the devaluation of the CFAF in January, 1994, and the removal and later partial reinstatement of fertiliser subsidies in Nigeria.

The impact of these major drivers of change, and their associated instabilities, collectively constituted an adaptive challenge to smallholder producers comparable in scale to the much better publicised changes faced in the "transition economies" from the 1980s. This challenge was for long under-estimated by the experts' preferences for a simplistic "diagnostic-prescriptive" frame of reference in development projects or programmes that downplayed the impact of long-term variability or change. It is impracticable in the present document to go into more detail. But, in relation to our objective, the first point that we stress is that the survival or *persistence* of rural communities and livelihoods throughout this long period of external challenge is itself a strong argument for taking their internal resources seriously. Even in the drylands, where the Sahel Drought of the early 1970s, together with the negative impact of colonial export agriculture, was confidently predicted to bring disaster to several regions or peoples (see, for example, arguments developed by Copans, 1975; Watts, 1983), many more people are found today than were there in 1960, social continuity having been underwritten by complex adaptive behaviour.

We next look at the nature of the demographic challenge in the six chosen countries.

Growth of population and of the agricultural population

Population census data are discontinuous and sometimes unreliable; the interpolations which are necessary to generate a time series for comparison with agricultural output (or other) variables can, therefore, not only impart a fictitious regularity to the plotted curves but also a misleading slope. Nevertheless it is clear that among the six countries, a strict geometrical curve in the growth in the total estimated population is only proposed in two (Mali and Niger – the second having had only two censuses, in 1977 and 1988) (Barry *et al.*, 2000; Tiffen, 2001). The others admit some indication of the deceleration to be expected in the first stage of a demographic transition (*See in Annex 4b:* **Figs. 11a and 11b**).

See in Annex 4b:
Figs. 11a and 11b Total population

The expected transition to a relatively small (and eventually smaller) agricultural labour force, which follows from urbanisation and employment diversification, is apparently further advanced (**Figs. 12a and 12b**). Using the "agricultural population" – as defined and estimated by FAO – as a proxy for this variable, we find that (expressed as a percentage of the total population), it has grown significantly more slowly in all countries save Mali and Niger. Even there, the visible scale of urbanisation in Niamey or Bamako speaks for itself. The most interesting countries are Nigeria and Côte d'Ivoire, where the agricultural population, as a percentage of total population, is estimated to have already gone into decline, and, even in absolute terms, has stagnated since the early 1990s. What is happening today in Nigeria is considered to be likely in future elsewhere (Snrech, 1995).

See:
Figs. 12a and 12b Agricultural population

The growth trends, and the *absolute* numbers, define the challenge for achieving food sufficiency in basic staples, in so far as this is a recognised aim of macro-economic policy. The trends in the agricultural population, and its *relative* numbers, in so far as this statistic can serve as a proxy for the agricultural labour force, can on the other hand give an indication of trends in the efficiency of labour use in agriculture. These themes are explored below. In both, it will be seen that crude thinking about "overpopulation" does little to advance understanding of the performance of the smallholder agricultural sector.

Before taking up these questions, it is necessary to take a critical look at land development – the process of investing in land use transformation.

Land development: investing in land use transformation

The extension of the cropland area is commonly misrepresented as a form of mismanagement of natural resources, summarised in such pejorative expressions as "slash and burn" or "nutrient mining". Because development projects or programmes, obsessed with the technical "modernisation" of agriculture, have provided credit to farmers on an assumption that they cannot or do not invest, the value and achievements of private investment in African agrarian landscapes have been consistently under-estimated by outsiders. It is easily forgotten that transforming natural vegetation into farmland costs appreciable amounts of labour or money, often invested in small increments over a period of time. Data are available from micro-scale studies for estimating such costs. At the national level, however, gross estimates would be dangerous and a proxy variable is preferred. The best available (in a long time series) is the growth of the cultivated fraction, as variously recognised in land use classifications (Ba *et al.*, 2000; Mahamane, 2001). This land – in rural West Africa – has almost all

been transformed from natural vegetation into some form of agriculturally productive land under small-scale farming using hand technologies. The use of this as an indicator of private investment is unusual practice, but relevant in systems where the greater part of landscape transformation has been achieved by unpaid labour with few or no purchased inputs. It may also be objected that the indicator measures farm investment but not investment in livestock, which traditionally depended on the use of grazing resources in natural woodlands or grasslands. However, under present conditions this objection is weakened by the observed facts that livestock are increasingly dependent today on biomass produced on farms – residues, boundary plants, tree foliage, weeds – and that formerly "natural" vegetation is increasingly found to be, in reality, managed fallows forming a part of the farming cycle (Harris, 2000; Issaka, 2001).

It is therefore possible to use the cultivated fraction, not as a measure of deforestation (as is often assumed) – a negative development indicator – but rather of small private investments in land development over time. (This merely brings evaluation of landscape transformations in Africa into line with what is accepted practice in European economic history.) Even before the beginning of our period (1960), over substantial areas in some of our chosen countries, over 75% of the surface was under cultivation and short (grass) fallow cycles, in both drylands and humid forests (e.g. in the *bassin arachidier* of Senegal, the Kano Close-Settled Zone of northern Nigeria, and the oil-palm farmlands of south-eastern Nigeria). "Saturation" is a word used to describe a situation where no more land can be obtained that is free from private claims. Such a landscape transformation represents an immense investment of effort in clearance, suppression of natural regeneration, reorganisation into fields and holdings, sometimes with permanent boundaries, the protection or planting of useful trees, and experimentation with – and subsequently the regularisation of – soil fertility management. The closing of the land frontier has no less significance in West Africa today than it did a century ago in North America or Australia.

Unfortunately, the FAO data on land use call for considerable caution. No countries have enjoyed detailed, ground-based surveys of land use covering the whole national territory, and even if they had, the parameter of interest to us – change over time – would still present problems. Merely adding up harvested areas for all crops, using projections from sample surveys, risks under-estimation from the withholding of information and over-estimation from double-counting mixed cropping. FAO land use data are based on agricultural sample surveys or – especially for earlier years – estimates or guesstimates, some of which are repeated year after year as if no change had occurred. Remotely sensed data have fewer technical problems. Surveys based on the interpretation of earth satellite data, either selectively or comprehensively sampled, have been carried out in Nigeria. (It is not known at present what is available elsewhere.)

Charting the changes in the cultivated fraction is pointless unless linked to one or more drivers. Many drivers affect land use change world-wide (Lambin *et al.*, 2001). The first one to consider is demographic growth, as it is commonly alleged that too many people result in uneconomically small land holdings – which is portrayed as a major flaw in family farming. Of course it should not be the total population that is considered but the agricultural population (those actually using agricultural land), which can be simply divided by the area found to be under cultivation at the time of surveys, with interpolations in intermediate years. In performing this crude operation, it emerges that each of the six countries has an unique relationship. The differences are instructive.

Ghana model (**Fig. 13**)
The class "cropland" combines the FAO's two classes of arable land under temporary crops – mostly annual or shorter season crops, and land under permanent crops – mostly trees or shrubs. A comparison of **Fig. 13** with the trajectories of growth in Ghana's total population (**Fig. 11a**) and agricultural population (**Fig. 12a**) – which are similar, according to the estimates – suggests a simple relationship between rapid and sustained population growth, on the one hand and much slower growth in cropland, on the other, producing a decline in the number of hectares of cropland per agricultural person, apart from an inflexion in 1997 when an upward revision in the estimating procedure for cropland distorted both trajectories. The data before 1975 cannot be used with confidence because

they assume an unchanged area of cropland between 1961 and 1975, which is improbable. The "Ghana model" appears to illustrate a primordial relationship between demographic factors and land use change – "not enough land to go around" in neo-Malthusian terms. It implies a need for a rising trend in productivity per hectare, if the rising agricultural population were to provide its own needs, let alone those of the non-agricultural population. But why did not cropland increase faster? There are two possible answers – either there was not enough cultivable land available, or the economic incentives were inadequate for agricultural investment. The first can be excluded (at a national scale, though there were – and are – severe local shortages), as cropland, according to these data, occupied only 14.5% of the national space in 1961 and 25.5% in 1999. The residue is not, all of it, likely to be uncultivable. An hypothesis that the decline in cropland per agricultural person was due to weak investment incentives, however, accords with the under-performance of the economy as a whole – from the mistakes of prioritising industrialisation and state farming in the 1960s up until revival occurred in the later 1990s.

See in Annex 4b:
Fig. 13 Cropland and agricultural population: Ghana

Côte d'Ivoire model (See in Annex 4b: **Fig. 14***)*
A plausible upward trend in cropland, sustained over the entire 40 years, gives ground for confidence in the data for Côte d'Ivoire. The trajectory of average cropland per agricultural person did not decline, as in Ghana, except for short periods (the longest being 1965–1973). This was despite an equally rapid growth in the total population (*See in Annex 4b:* **Fig. 11a**). It even increased notably – by more than 10% - between 1991 and 1997, ending significantly higher than in any previous year. A glance at **Fig. 12a** shows that in the 1990s, growth in the agricultural population is considered to have ceased, reflecting increased urban migration and a parallel decrease in the rural population. The "Côte d'Ivoire model" suggests strong investment incentives in agriculture during most of the period, though levelling off in the later 1990s. This is consistent with the country's reputation for prosperity and sound economic management during most of the period. Cropland increased from 8.5% to 23.5% of the national space between 1961 and 1999, and appeared set to continue to increase.

See in Annex 4b:
Fig. 14 Cropland and agricultural population: Côte d'Ivoire

Niger model **(***See in Annex 4b:* **Fig. 15)**
Whether or not the geometrical demographic trajectories portrayed in **Figs. 11a and 11b** are reliable, Niger experienced rapid growth in both variables during most of the period. The conjunction of cropland area and of cropland per agricultural person appears classically Malthusian. The overall increase in cropland was similar in scale to that in Côte d'Ivoire, though fictitious 'flats' appear where fixed estimates were used (1961–1969; 1981–1991). Average cropland per agricultural person trended remorselessly downwards (ignoring some upward inflexions caused, as elsewhere, by revisions of the land use estimations). Two features distinguish this Sahelian trajectory from those of both Ghana and Côte d'Ivoire. The first, visible in the graph, is the violent oscillation recorded at the time of the Sahel Drought (1973–1975), when there is known to have been a withdrawal of cultivation from marginal areas. (An absence of similar oscillation in later drought cycles is explained by the use of fixed land use estimates). The second, not shown in the graph, is the operation of an ecological barrier to farm investment (the dry frontier of rain-fed arable farming), reinforced by administrative prohibition (the *zone pastorale* north of the 250mm rainfall isohyet is banned – not always effectively – from cultivation). This sets a lower limit to available cultivable land and makes it meaningless to compare cropland with the national space. The Niger or "desert edge" model, therefore, questions the role of biophysical limits of agriculture on the desert edge, and the possibility of raising productivity on existing cropland is correspondingly urgent.

See in Annex 4b:
Fig. 15 Cropland and agricultural population: Niger

Nigeria (See in Annex 4b: **Fig. 16***)*
Unfortunately, the Nigerian land use data provided by FAO are difficult to reconcile with independent sources, both in terms of the trajectory slope and of absolute levels. The record of population growth (**Fig. 11b**) and the estimate of the agricultural population (**Fig. 12b**) are of considerable interest in suggesting the earliest, and now most advanced transition to a lower, and now stagnant agricultural population. But contrary to all conventional wisdom, field observations, anecdotes and recently the most extensive earth satellite data analyses in West Africa, the cropland estimate ("Cropland 1" in **Fig. 16**) assumes a nearly flat trajectory from 1961 to 1995, from 28.8 million ha in 1961 to 32.5 in 1991, followed by a surprising fall to just over 30 million ha.

See in Annex 4b:
Fig. 16 Cropland and agricultural population: Nigeria

Independent estimates are shown as "Cropland 2" in **Fig. 16**. For the mid-1960s, best estimates of land use published in the *World Atlas of Agriculture* (Mabogunje *et al.*, 1977) put arable land, fruit trees and orchards at 11.5 million hectares. They were made up from separate estimates, carried out in northern, eastern and western Nigeria, of arable land and of fruit trees and orchards, and sum to about 12.5% of the national space. This is unlikely to have been under-estimated by 60%, as the FAO series suggests! In 1998, a national survey of land use and vegetation change was carried out for the two periods, 1976—78 and 1993–95 (Geomatics International, 1998). (This was mainly based on Landsat Multispectral Satellite data (for the first period) and SPOT Multispectral data for the second (Geomatics International). This study produced data for 34 classes and harmonised for the two three-year periods. Adding together those classes that include agriculture (intensive, extensive, floodplains, tree crops and some minor types), we obtain totals of 49.3 million ha in the first period and 58.6 million in the second. These are respectively some 64% and 80% *above* the FAO estimates for the years in question.

The last two surveys undoubtedly include much fallow land (under "extensive agriculture"), which forms a part of cultivation cycles, as well as plots on boundaries, river banks, etc., too small to identify separately. But a generous allowance for such land – say 25% of the whole – still leaves estimates 23% and 35% above the FAO series for the relevant years. These must cast serious doubt on the FAO series, which reaches 30.2 million in 1977, and only 32.7 million (close to its all-time peak) in 1994. They suggest an entirely different narrative.

The FAO series thus fails to chronicle *possibly the most outstanding* feature of Nigerian agriculture over the four decades in question: a spatial expansion that accords well with all known observations, and represents a truly colossal aggregate investment especially in labour (for although mechanisation was introduced to several farm operations on a significant scale, it made very little impact on the labour-intensive activities of clearing and developing land).

Mali and Senegal
Data questions discourage any use of the cropland estimates for these countries. For Mali, fixed estimates were employed for long periods and violently adjusted after 1992 on a scale that invalidates the earlier trajectories, while in Senegal, cropland apparently did not change in extent from 1961 until after 1999! Such "estimates" gravely impede the adoption of sensible land use policies.

Some space has been given to land use questions as it will no longer do for analysts to ignore the absence of quantified data in a category that is agreed to be essential for agricultural planning in countries outside Africa. On the other hand, it remains a mystery why data that are critical for assessing productivity, sustainability and *investment* have been allowed to remain erratic, incomplete and unstandardised. The argument here is that this lacuna prejudices the case for smallholder farming, since the single most important category of farm investment (taking a long-term perspective) is

thereby discounted. There is a partial solution to this problem: in Nigeria, and possibly in other countries (Senegal), there are known to be alternative data sets and/or representative local studies from which a broader picture can be constructed. This is an urgent priority but would require more resources than are presently available for this study.

Food sufficiency: meeting domestic demand

In this section, we compare production estimates on a per capita basis of the total population, as a guide to the extent of food sufficiency achieved at a national level, for the major food crops. This is done in two series: (a) cereal crops (paddy rice, maize, sorghum and millet), and (b) root and forest crops (cassava, yams and plantain). With the first group is shown a composite FAO index for cereals. Most countries produce both groups in large quantities (Nigeria, Ghana, Côte d'Ivoire) but the drier Sahelian countries produce less of the second group, or virtually none (Niger). The human energy requirements from these groups are of a different order, and to combine their production into a simple indicator is rather complex. A composite FAO index for "food net" (of imports) per caput is employed for this purpose. In these series, a failure to achieve national food sufficiency in the long-term is expected to be shown in a downward sloping trajectory. A level trajectory (in the absence of large-scale imports) suggests average sufficiency, maintained against population growth. Fluctuations in production per capita imply scarcities, usually induced by climatic events. An upward slope would not occur unless there were large-scale exports of staple food commodities.

The diversity between countries is again conspicuous. However we begin with the FAO composite food index (**Fig. 17**). There are three types of trajectory shown: the indices for Ghana and Nigeria fall to a trough in the early 1980s recovering later and showing an overall improvement; those for Senegal and Niger display a resolute downward trend unaffected by shorter term fluctuations; and those for Côte d'Ivoire and Mali are more or less level overall, with weaker signs of a trough in the early 1980s and with greater fluctuations in Mali.

See in Annex 4b:
Fig. 17 Food (net) per caput indices

Ghana-Nigeria model (**Figs. 18 and 19**)
Behind the simple trajectories of the FAO food indices, there is much diversity. The cereal crop production graphs for both countries suggest, after 1965: fluctuations in the 1970s, decline to a trough in the early 1980s, recovery to a peak around 1995, and, thereafter, a plateau or slight decline. Of the main cereals, rice and maize achieved significant increases which began in the early 1980s, when new varieties, fertilisers, and rapid increases in demand took effect in Nigeria (and possibly Ghana). But millet and sorghum, the Cinderellas among cereals, stagnated in terms of per caput production. They have proved to be less susceptible to new technology and yet remain dominant among cereals in terms of food supply. Total production per capita of these four crops increased over the 40-year period by 62.6% in Ghana and decreased by 1.2% (which is not a significant change) in Nigeria (**Table 1**).

See in Annex 4b:
Fig. 18 Cereal crop production: Ghana and Nigeria
Fig. 19 Root and forest crop production: Ghana and Nigeria

The production of yams and cassava per capita increased abruptly in both countries during the late 1980s/early 1990s, the main difference being that Nigeria also had an earlier 'yam boom' in 1965–70, and did better than Ghana with yams in absolute terms. Plantain, however, was produced in much larger quantities in Ghana. Output per capita of the three crops combined was 60.2% higher in Ghana and 56.7% higher in Nigeria at the end of the 40-year period (**Table 1**).

The most relevant characteristic of the Ghana-Nigeria model for present purposes was a strong recovery from a deep trough in the early 1980s, a trough that led at the time to gloomy

prognostications of failing agriculture and intensifying dependency on imported food. What changed was not the capacity of family farms to produce, but the quality of macro-economic policies. Renewed policy uncertainty in the later 1990s may have been responsible for signs of hesitation in this recovery.

Table 1: Change in per capita production of major food crops, 1961–63 to 1997–99 (%)

Country	Cereal crops	Root and forest crops	Change
Ghana	rice, maize, millet, sorghum		+ 59.8
		cassava, yams, plantains	+ 66.3
Nigeria	rice, maize, millet, sorghum		**- 1.2**
		cassava, yams, plantains	+ 76.3
Mali	rice, maize, millet, sorghum		**- 2.6**
Niger	rice, millet		**- 24.2**
	cowpeas		+ 131.2
Côte d'Ivoire	rice, maize, millet		+ 30.5
		cassava, yams, bananas, plantains	**- 28.5**
Senegal	rice, maize, millet, sorghum		**- 41.2**
		cowpeas	+ 33.3

Senegal-Niger model

In neither of these countries are root or forest crops important relative to the cereals, and in both of them the food indices (**Fig. 17**) tended downwards, though less conclusively in Niger, where after 1985 the decline halted, though without being reversed. Consistently with these images, recent studies at the district level in central Senegal and eastern Niger confirm that Senegalese agriculture remains in crisis, while Maradi Department in Niger is showing strong signs of increasing output per capita and suggestive evidence of improving yield trends (Faye *et al.*, 2001; Mortimore *et al.*, 2001). The production per capita of individual crops (**Fig. 20**) exemplify the violent fluctuations characteristic of Sahelian production systems, obscuring the longer term trends. In Senegal, these fluctuations appear to have been quite regular, but in Niger, on the other hand, there was a peak in millet and sorghum production in 1979–81, following a steady fall from the 1960s to 1973.

Owing to high values at the beginning of the period, Niger finished up with an overall decline of 24% in cereal production per caput, only just staying above the 200 kg per cap level required for average food sufficiency in a predominantly grain-consuming population (**Table 1**). This failure was, however, compensated by a significant increase in cowpea production.

See in Annex 4b:
Fig. 20 Grain crop production: Senegal and Niger

Senegal on the face of it gives cause for concern. Notwithstanding a diversified ecology (compared with Niger), its sub-humid zone does not contribute significant quantities (per caput) of the root crops; indeed cassava declined from over 40 kg per cap to less than 20 during the 40 years, to the point of being sometimes overtaken by cowpea (a crop not normally produced in impressive weight), which managed a 33% increase over the 40-year period – less dramatic, however, than in Niger (**Table 1**). Most noticeable is a clear downward trajectory in millet production per caput (**Fig. 20**), and a low absolute level, averaging barely half of the notional 200 kg per cap requirement in the 1960s and only a third of it in the 1990s. Maize and sorghum did rather better, but the quantities were small. The importation of cheap rice – a colonial policy which had an irreversible effect on food preferences – in quantities substantial enough to undermine the market for local substitutes (millet or cassava, but not cowpea) is responsible for this clear-cut failure of the agricultural sector in terms of food sufficiency.

Côte d'Ivoire and Mali

These countries have rather little in common apart from a similarly level trajectory in their food indices (**Fig. 17**). In Côte d'Ivoire, per caput production of the three cereal crops (rice, maize and millet, the last having minor importance) was 30% higher at the end of the period than at

the beginning, while that of root and forest crops (cassava, yams, bananas and plantains) was 28% lower (**Table 1**). In terms of the individual crops (**Fig. 21**), the decline of yam production was particularly striking. The FAOcereal index remained above its base throughout the 1960s and 1970s, but slipped below in the 1980s up until 1995, when a strong but short-lived peak reflected higher rice production. Côte d'Ivoire farmers, however, produce a wider range of crops than their Sahelian counterparts, so a comparison with Mali or Niger in terms of key indicator crops is not necessarily meaningful. The FAO food production index shows a more or less steady improvement over the 40 years. This appears to have been achieved through adaptation and diversification, in which a shift away from roots and forest crops into cereals seems to have played an important part.

See in Annex 4b:
Fig. 21 Crop production: Côte d'Ivoire

In Mali, all four cereals (rice, maize, millet and sorghum) recovered strongly from a trough in 1981, but whereas this recovery continued to the end of the series for rice and maize, that of millet and sorghum faltered in the 1990s. They cancelled each other out, so that production per capita of the four crops remained where it was at the beginning of the period. However, from 1981 to 1989 there was impressive recovery in all four crops, and for rice and maize this momentum continued until the end of the series (**Fig. 22**).

See in Annex 4b:
Fig. 22 Crop production: Mali

The picture of these two countries revealed by the data is one of very different production systems both adapting to changing conditions, whether economic (Côte d'Ivoire) or environmental (Mali), where farmers have been resilient in face of rainfall variability and, though in this respect less than in Niger, by scarcities of high-potential land (such as floodplains where rice can be grown).

What can we learn from these trajectories, as confusing in their detail as they are diverse in their directions?

- Four of the six countries (the exceptions being Senegal and to a lesser extent Niger) have maintained food production per capita in terms of a 'basket' of staple food commodities, or improved it, and some have recovered from deep crises in the early 1980s, to levels comparable to or better than those of the early 1960s. Only in Senegal did the indices decline from the beginning to the end of our 40-year period; in Niger decline was arrested (though not reversed) after 1985.
- The performance of major crops, or of groups of crops, has often differed within the same country. An overall "food sufficiency index" must take account of grain-tuber energy equivalents, and we assume that this has been done in the FAO "food net" index. There is room for adaptive swings in crop preferences, both of consumers and of producers.
- Fluctuations, clearly attributable to rainfall variability (especially in Niger, Mali and Senegal), translate in per caput terms to a threat to food sufficiency at a national level, which increases the likelihood that food *security* comes under threat in poorer households, including those of many producers, who may decapitalise their productive potential afterwards.
- There appear to be many adaptive strategies at work as producers shift among crops and (though not exposed in this brief analysis) diversify in response to food marketing opportunities. This process has been noted in Senegal where the traditional crops are most under threat.
- Since the production of food per capita only rarely correlates either with the growth of the total population or with the growth of the agricultural population, a simple demographic mechanism must be discounted in the food equation.

- Much more important is policy and the global economic environment, which better explain the widespread decline in food sufficiency that occurred in many countries during the 1980s, and the subsequent recovery in most of them.

Factor efficiency: evidence of intensification

For family farms working under a severe capital constraint, labour or land-saving technologies are only selectively and gradually adopted. A view of farm investment which is confined to 'lumpy' technological innovations, often financed by credit, is inappropriate for understanding capital management by poor farmers, men or women. For example, in livestock keeping, the growing importance of goats relative to large animals shows poor peoples' need to invest incrementally in small units, with an assured output market. Much expenditure in crop production takes the form of one-off labour hiring, small quantities of inorganic fertiliser, hand tool repairs and replacements at the local blacksmith's workshop, or other transactions. These are not usually picked up in surveys. As argued above, the conversion of a natural landscape into farmland and villages, created by labour spent over perhaps several generations, is a process of adding value. It is misleading to represent it as a form of degradation.[21]

When permanent farming replaces fallowing or shifting cultivation, and where livestock are grazed increasingly on the farm instead of in natural woodland or grassland, the extent of investment can no longer be gauged from the size of the cultivated fraction. Maintaining land at optimal productivity depends on manuring, composting, multiple cropping, higher planting densities, intercropping, and weed suppression – all labour-intensive activities, for which the possibilities of substitution by capital are restricted. Analysis of this process of incremental intensification through capital creation and substitution can best be conducted at the local scale (for an illustration from Maradi, see Annex 4b).

The long-term series may offer insights on three perspectives of intensification: (a) trends in crop yields per hectare, (b) recorded consumption of inorganic fertilisers, and (c) indices of the value of output per hectare. For evidence of intensification in livestock keeping, see below.

Yield trends per hectare
The FAO database has three linked series on harvested area, yield per hectare and total production for each crop. It is understood that in submitting data to the FAO, national sources are encouraged to use yield as either a dependent or an independent variable. Without detailed information on sources, we cannot judge whether yields were estimated from primary sources or simply deduced from production by harvested area. For some crops, the yield estimates contain wide ranges between countries, whose understanding calls for location-specific data on cultivation and fertilisation practices. For example, millet yields in Nigeria are claimed to have been more than double those obtained in Niger from 1982 onwards. Yields are known to vary, between regions, agro-ecological zones, localities and even farms and fields within the same village, so large international differences are not inherently implausible. For present purposes, the yield estimates are accepted at face value.

Figs. 23-25 show the long-term trends in estimated yields for three major crops (millet, maize, cassava), each grown in all six countries. Comparisons between the countries reveal differences both in trajectory and in yield levels.

Millet (**Fig. 23**) Millet is a "traditional" food crop whose hardiness in drought-affected areas of poor soil has proved difficult to improve on. Yield trends should show the extent to which the "traditional" food crop sector can improve its performance under family farm conditions. All six countries began in 1961 with average yields around 0.5-0.6 tons/ha, so the differences between them are in the rate and extent of improvement subsequently claimed in the data. Only Niger appears to have declined; even its

[21] In an ecologically comparable area of Nigeria, an experimental study found that total production of plant biomass on farmland equals or exceeds that produced by natural vegetation according to a model based on rainfall (Mortimore *et al.*, 1999).

Sahelian counterparts, Mali and Senegal, achieved improvements, notwithstanding the effects of drought. There is independent evidence from Senegal of improved yields per mm of rainfall (ref.). The ecologically diversified countries all improved, Côte d'Ivoire only slowly (though millet is an unimportant crop) and Nigeria with impressive rapidity, and to an impressive extent, taking account of the large numbers of farmers involved, and the fact that millet, even in ecologically diversified countries, is only grown in the driest areas.

See in Annex 4b:
Figs. 23a-f Millet yields

Maize (**Fig. 24**) This crop has been targeted by research and extension interventions, as a crop with increasing markets. It would be expected to perform better than millet, and serve as an indicator of family farming systems' capacity to adapt to new opportunities. All six countries claim improving yield trends, though in Niger the improvement is recent and perhaps fragile. In Nigeria, it can easily be seen how maize yields could have been affected by the promotion of new varieties with subsidised fertilisers in 1976-89. Ghana also appears to be well ahead of some of the other countries.

See in Annex 4b:
Figs. 24a-f Maize yields

Cassava (**Fig. 25**) As a food crop that has expanded significantly during the past half-century, whether considered in spatial or in production terms, and which (when processed) enjoys increasing popularity as a "fast food", cassava has also benefited from research targeted on plant disease constraints. The graphs show more variable trends than for the other crops. Niger, rather surprisingly, appears to have smartly improved its average yields since the 1980s, while Senegal – enjoying better agro-ecological conditions – appears to have presided over a decline (though a recent reversal may be evident), and Mali was flat. Of the high yielders, Nigeria has stagnated while Ghana has shot ahead, but Côte d'Ivoire made the most rapid progress of all from a very low base.

See in Annex 4b:
Figs. 25a-f Cassava yields

Fertiliser consumption
The yield data, if it is reliable, points to a gradual intensification of agricultural production. Has this been achieved with the use of inorganic fertilisers? Links with maize production have been mentioned, and it is well known that farmers can often only afford to use purchased inputs on market crops. (However, yield trends among the "traditional" export crops – cotton, groundnuts, cocoa – have been less positive than those discussed above.) There is much debate within as well as outside West Africa about the reduction or withdrawal of fertiliser subsidies under programmes of structural adjustment. Fertiliser statistics are relatively reliable because all inorganics are either imported or manufactured under control and such is the demand for them that it may safely be assumed that stocks do not last for more than 18 months. What trends are apparent?

Figs. 26 and 27 demonstrate almost identical upward trajectories for consumption on a per hectare basis and per capita of the agricultural population. Fertiliser use per hectare of cropland should be set against the increases in cropland noted earlier. Also apparent is the levelling off which has occurred since the 1970s. The contradiction between these two forces is reflected in the differences between the linear trends (reflecting the entire period) and the polynomial (reflecting the vicissitudes of structural adjustment), neatly encapsulating the policy dilemma.

See in Annex 4b:
Fig. 26 Fertiliser consumption per hectare
Fig. 27 Fertiliser consumption per agricultural person

At the level of individual countries, there is extraordinary diversity of trajectories (**Fig. 28**), which underlines the fact that fertiliser consumption is determined less by demand than by supply constraints at the point of entry or manufacture. Local studies in Kano and Maradi confirm that farmers' primary constraint is the supply rather than the price of fertiliser (internal reports by Ariyo, 2002; Boubacar, 2002). It appears that in each country a separate struggle has been waged with its own chronicle of policy swings and reversals. The peaks and troughs are highly differentiated in timing, underlining that the principal determinant of fertiliser use is not demand but macro-economic budget management in each country. For example, consumption peaked in Senegal in 1975–78, in Côte d'Ivoire in 1978–82 and in 1997–98, in Ghana in 1978 and 1982–83, in Mali in 1985, in Nigeria in 1991–93.

See in Annex 4b:
Fig. 28 Fertiliser consumption by country

From the point of view of this essay, the fertiliser consumption data provides graphic evidence of the capacity of family farming systems in West Africa as a whole to access intensification inputs productively, when they are available. The relatively high accuracy of fertiliser statistics, and ease of analysis, has taken attention away from the need to quantify the use of organic fertilisation or nutrient recycling in such forms as manuring, composting, or green manuring.

Value of output per hectare
Intensification can be defined as increasing the value of output per hectare by increasing inputs of labour, capital or new knowledge (Tiffen *et al.*, 1994). By accessing the FAO crop price series (which are denominated in local currencies) and using as a deflator the Consumer Price Indices published by the World Bank (*World Bank Database,* 2001), it is possible to generate an estimate of the value of output per hectare in constant terms and taking account of all crops for which data series exist. This is possible for a 30-year period, 1965–95. The results are shown in **Figs. 29a-f**. Since the currencies differ, comparisons between the levels achieved are impossible except for CFAF zone countries.[22]

See in Annex 4b:
Figs. 29a-f Value of output per hectare

First there are two countries where upward trends dominate, though with major interruptions: Nigeria and Ghana (**Figs. 29a and 29b**). A second group shows a tendency to "hump", with upward trends before the early 1980s and downward ones after. This group consists of Côte d'Ivoire, Mali and Niger (**Figs. 29c-e**). Finally, Senegal fluctuated violently and remained flat (**Fig. 29f**). The most important observation is the proven occurrence of prolonged periods during which values per hectare improved. The second obvious point is that given this capacity to intensify in value terms, interruptions can be understood as the result of external factors rather than of any structural incapacity. Improved macro-economic management of these factors is in the best interest of family farms. A third observation is that the negative trends apparent in the CFAF zone countries during the latter part of the period give cause for concern, as they do not reflect intensification, but rather its opposite. In Senegal, agriculturalists speak of "décapitalisation" and in Côte d'Ivoire (see above) there are hints that extensification rather than intensification is occurring. The impact of the devaluation of the CFAF by 50% in January, 1994, cannot be monitored in this study as the price series ended in 1995. Considerable uncertainty hung over the 1990s, and its resolution became an urgent policy priority. The trajectory of Côte d'Ivoire shows that we are not merely looking at a "Sahelian syndrome".[23]

Price incentives and competitiveness

An attempt was made to investigate links between the price behaviour of individual crops and market responses, but was abandoned owing to three factors: (a) as mentioned before, the price series have not

[22] As value per hectare is subject to the influence of price trends as well as internal factor allocations, these trends should be interpreted with caution.

[23] This issue is capable of resolution but not within the limits set to this review.

been updated after 1995, but the 1990s are crucial for an assessment of competitiveness; (b) direct responses are unlikely because family farmers do not work with an open cheque book - they continue to work under constraints of various kinds, which have a bearing on market decisions; and (c) prices alone are known to us, but we are not in a position to assess profitability owing to an absence of information concerning costs (except for fertiliser).

Expanded production and improving yields per hectare of major crops such as maize or cassava provide indirect evidence of market responses on a large scale. By comparison with food crops, the 'traditional' export crops are not necessarily considered profitable, unless when diverted to domestic markets (e.g. groundnuts). A widely reported phenomenon is an expanded interest in "niche" crops, such as hibiscus (Senegal, Niger, Nigeria), sesame (Mali, Nigeria), tiger nuts (Maradi Department of Niger), and many others. What is significant is not their individual quantitative importance but the emerging diversity of marketable crops. However it should not be denied that some of these niche crops are but poor substitutes for once profitable export agriculture.

Table 2: A ranking of major commodities on the basis of price trends, 1965–1995

	Ghana	Côte d'Iv	Mali	Niger	Nigeria	Senegal
Rice	**1**	7	**1**	8	11	4
Maize	9	8	4	**3**	12	**3**
Cassava	10	**2**	**2**	6	7	5
G'nuts	**2**	**3**	**3**	4	6	**2**
Cotton	5	6	7	9	10	6
Tomato	7	5	6	**2**	**3**	8
Onions	9	11	6	7	5	6
Bananas	8	9				6
Plantains	**3**	**1**			**1**	
Oranges	11	10				7
Cocoa	4	4			9	
Chillies	6	4			**2**	
Melon seed			5		4	**1**
Cowpeas				5	8	**3**
Sesame				**1**	9	
Top three:	Rice G'nuts Plantains	Plantains Cassava G'nuts	Rice Cassava G'nuts	Sesame Tomatoes Maize	Plantains Chillies Tomatoes	Melonseed G'nuts Cowpeas Maize

Table 2 shows a country bycountry ranking of crops in terms of their real price improvement over the period of 30 years (comparing prices in the years 1965–67 with those of 1993–95). The differences between countries, even neighbours, are striking, and it can be seen that price incentive behaviour is too complex to be summed up in a simple statement such as "export agriculture - down, urban food commodities - up". There are some surprises in this table, which suggests that the leaders are (predictably) rice, maize, cassava and groundnuts, but that in some countries plantain, tomato, chillies, sesame and melon seed deserve to join them. But we cannot be sure if these crude indicators are not themselves products of some unknown artefact, and as pointed out already, prices are not the only consideration where farmers make marketing decisions.

Smallholder livestock production

The interactions between crop and livestock production demand, in an ideal world, an integrated assessment under the headings already considered. But the systemic differences between crops and livestock force a more pragmatic approach which focuses on them separately. The questions we shall address in this section are: (1) What long-term trends are discernible in livestock production and were they able to keep up with population growth, a proxy for domestic demand for livestock products? (2) How far were these trends driven by rainfall, which can be used as a proxy for feed supply? (3) How far were they responsive to trends in meat prices, the only indicator presently available of market demand? (Milk price series are also available, but the informality, fragmentation, and localisation of a great proportion of marketing is likely to make a superficial data analysis such as this misleading.)

It is a necessary assumption in the following discussion that all livestock production is in the hands of smallholders, because in the crude indices used, no separate account is taken of (a) large-scale, commercial livestock enterprises (whose number is so small in West Africa that they have little impact on the general situation), (b) animals belonging to wealthy urban owners which are managed under contract by pastoral specialists, sometimes in fragmented herds, and (c) larger-than-average herds belonging to some nomadic specialists, which however support large extended families so that on a per capita basis they can still be considered as smallholdings. A second preliminary point that must be made is that national indices are less sufficient guides to livestock productivity than they are for crops, because of the frequency of trans-border movements both of grazing herds and of meat on its way to market (whether slaughtered or alive (usually the latter). Throughout the period, a consistent pattern of livestock marketing – of movements from interior drylands to urbanised coastal markets – has been sustained, notwithstanding vicissitudes induced by exchange rate changes or EU dumping practices. Producers' responses to prices, therefore, may not always be confined to the country leading the demand.

In partial answer to Question (1), we have plotted long-term trends in livestock per capita, using standard units,[24] for each country (**Fig. 30**). It should be noted that livestock have multiple purposes in rural livelihoods (investment, meat, hides/skins, milk and other dairy products, transport, farm energy and manure). Over the 40 years, only Niger and perhaps Mali failed to maintain or improve on their per capita livestock holdings. Given average rates of increase in the human population often in the range 2.5–3.5%, this overall stability represents a massive real increase in the livestock sectors. It results from a direct link with household livelihood strategies, in which animals are seen as investments, breeders, or income earners, rather than merely for consumption(Faye *et al.*, 2000). Statistically significant correlations have been found between livestock and human populations in Nigeria and Niger (Bourn and Wint, 1994).

See in Annex 4b:
Fig. 30 Indices of livestock per caput

Superimposed on this simplified representation of trends in the long-term are responses to feed constraints, most easily shown in rainfall variability and trends, as the livestock populations of West Africa are concentrated in the drylands. Long-term decline in average annual rainfall was a fact of life in the Sahel from a peak in the early 1950s until the early 1980s (**Fig. 10**), amounting to a fall of 25–30% between the long-term averages for 1931–60 and 1961–90. This meant a greater frequency of droughts during the 1970s and 1980s than had been experienced before in the period of recorded rainfall. Plant biomass productivity in the Sahel depends directly on rainfall. Consequently, the trajectory of livestock per capita in Niger was strongly downward, via a collapse in the Sahel Drought of 1973–74, and subsequent recovery, until the even worse collapse of 1986 which followed three years of drought, high mortality, and the movement of surviving herds to Nigeria. Thereafter, numbers stabilised, though at a low level; however, recent data from Maradi Department suggest a strongly upward trend which contradicts this national picture (Mortimore *et al.*, 2001). Mali's trajectory

[24] The units have yet to be confirmed by FAO.

reflected that of Niger in its fluctuations but not in its downward path, while that of Senegal, the third Sahelian country in our set, in spite of a slump between the two afore-mentioned droughts, moved strongly upward – more strongly than in any of the other five countries.

A rather different pattern is discernible, as might be expected, in Nigeria, Ghana and Côte d'Ivoire. Nigeria's very large livestock population grew rapidly, quickly recovering from the major droughts, until it peaked in 1986, the year in which a major part of Niger's surviving herds entered the country; but thereafter it fell until stabilising at a lower level during the 1990s. Ghana's trajectory was parallel, no doubt reflecting very similar ecological and trans-border relations. That of Côte d'Ivoire shows a stronger impact of drought in 1986 (though not in 1973–74), but is otherwise similar.

So the answer to the second part of Question (1) is that with the apparent exception of Niger, per capita livestock holdings were maintained or improved against a rapidly rising human population, but that in answer to Question (2), the discernible impact of rainfall was a major drag on this achievement and a determinant of inter-year variations.

In answer to Question (3), the trends in selected meat prices (those of cattle, goat and chicken meat slaughtered in the country, or "indigenous" meat are plotted for a 30-year period (1965–1994) (**Figs. 31a-c**). The general trend is stable or slowly declining over the period as a whole. For individual countries, the similarities indicate that the products are substitutable. Sudden adjustments either up or down (for example, in Côte d'Ivoire in 1974 and 1987) reflect factors other than the normal interaction of supply and demand, as shown by the continuity in direction before and after the event. Greater stability or even upward movements were achieved in some countries between 1987 and 1993, but sudden falls in the last year or two of this shortened series probably reflect (in some) the impact of the devaluation of the CFAF in 1994 (though in a direction opposite to what might have been expected, as it should have reduced competition from imported European meat). The persistence of per capita livestock holdings in the face of stagnating or declining meat prices, of course, reflects not irrational behaviour, but the wider role of livestock in household livelihoods, mentioned earlier. However if the multiple purposes of livestock interrupt such a causal link, in the other direction it can be said that smallholders' success in maintaining their livestock holdings likely contributed to downward trends in prices, given the fact that few West Africans eat meat often, demand for what is regarded as a food for special occasions being constrained by widespread poverty.

See in Annex 4b:
Fig. 31 Cattle, goat and chicken meat prices

In other words, in addressing Question (3), the evidence suggests that a simple market response model does less than justice to the complexity of livestock keeping in West Africa. Rather than merely responding to profitable meat prices (consumer demand) by increasing their production of indigenous meat, livestock owners have tended to accord priority to the multiple benefits of animals in their own (producers') diverse livelihood strategies. This may even have driven meat prices down – a trend noted in the major urban meat markets of Kano in Nigeria during the 1990s (Ariyo *et al.*, 2001) – as it is far from clear to what extent the influence of global price trends can be traced to West African meat markets, or has percolated to livestock decisions in rural households in West Africa.

Findings

This review of long-term data series for six West African countries (three Sahelian, three with diversified agro-ecologies) has shown country-specific trajectories of change. Can it point to robust findings of general applicability for West Africa as a whole? These are briefly summarised under three heads: (1) the historical achievements of family farms; (2) some indicators of capacity in the family farming sub-sector; and (3) the top three constraints that have affected the performance of the sub-sector. These findings arise from an analysis of the past. Questions concerning the future are identified in the following section.

Historical achievements of family farms

- Small family farms have invested in land development in an incremental process of landscape transformation which represents, in aggregate, a massive commitment of labour and capital to increasing agricultural output over time.
- Following many vicissitudes during the 40-year period, small-scale farmers (who comprise the overwhelming majority of agricultural producers) emerged at the end of the period as producers of equal or greater food output per capita of the total population than they were at the beginning, notwithstanding a doubling (or more) of the numbers of consumers, and (in some countries) a recent stagnation in the size of the agricultural (producer) population. The exceptions are Niger, which is exceptionally vulnerable to Sahelian biophysical constraints, and Senegal, where policy has privileged imported food.
- In some countries (Côte d'Ivoire, Ghana and Nigeria – cocoa; Mali – cotton; Senegal – groundnut oil) a continuing commitment to certain export commodities was accompanied by a recovery, more or less, of food sufficiency at national level. Export of other agricultural commodities declined (Nigeria - palm oil, cotton, groundnuts; Niger – groundnuts).
- A significant intensification of agriculture, achieved under favourable conditions in certain districts, has been observed before; but the long-term data series suggest that family farms in general are not ignoring the logic of intensification under increasing scarcities of additional cultivable land.

Indicators of capacity

- Family farms have demonstrated a capacity to add value to agricultural enterprises through productive investment and incremental intensification, as well as through extensification (often considered to have been the only means of increasing production). This does not mean that all family farms invest nor that all practices are sustainable. But at national level, average performance is suggestive.
- Between reversals induced by policy, global market factors or environmental disasters, upward trends were maintained for significant periods of time in several variables in most countries. More needs to be known about these developmental windows in agriculture, and the factors that interrupted them. However, their existence suggests a capacity in the family farming sub-sector which gives some ground for confidence, if enabling conditions can be created and sustained.
- Family farms can adapt to markets, by switching between crops, exploring niches, and adopting or adapting technologies and production systems while simultaneously coping with severe constraints. They have partially accomplished a transition from export to food crop marketing in response to changing opportunities. Although these data do not show it, they have also developed labour and other input markets.
- Capacity to compete is suggested by the frequency of positive production trends under conditions of stagnating or declining producer prices, for livestock as well as for crops. Price trends mirror global commodity price trends. Without changes in global prices, West African countries as a whole are not poised to stage a major recovery in the export of traditional agricultural commodities.

Major constraints

- Macro-economic management – even on the basis of the superficial observations offered here – emerges as the primary constraint or determinant of the performance of the agricultural sectors, country by country, and within it, of family farms. Policy must be tailored to the specific conditions of a country – its agro-ecological endowment, its people-land ratio, its level of

urbanisation and economic diversification, its commitment to export agriculture. Can any generalisations be made? A research priority should be to analyse medium-term periods in the data series, in relation to the stability and specific content of policy, for as many (and diverse) countries as possible. A comparative analysis of such periods could point the way towards "best practice" guidelines.

- The second major constraint – or determinant – which clearly underlies the data series is a growing scarcity of additional cultivable land (the closing of the land frontier). The data examined do not resolve conclusively the tension between neo-Malthusian and "neo-Boserupian" interpretations of land use change, as no generally compatible time-series data on land degradation exist, but as already observed, there are powerful suggestions of intensification coming through at national level in some countries. Since small-scale farming is, as a general proposition, more efficient in its use of land than large-scale farming, a second research priority should be to establish the linkage between agricultural change and the increasingly finite supply of new land, and better evaluate the capacity of family farms to manage transformation. The process of intensification goes far beyond the use (where possible) of inorganic fertilisers, and prominent facilitators are known to be the growth of markets and the integration of crop with animal husbandry.
- The third major constraint which explains much of the variability in the data series is rainfall and in particular the occurrence of droughts, especially (but not exclusively) in drier areas. Given the extent of such variability, and a trend throughout the Sahelo-Sudanian zone to increased aridity from the 1960s to the 1990s, it is truly remarkable that family farms, with their weak access to insurance, high dependency on home-produced food, and vulnerability to capital depletion, have nevertheless weathered so many storms during the period under consideration (most notably, the drought cycles of the early 1970s and 1980s). Since the Sahel Drought, research has contributed much to a systematic understanding of resilience at the household level, but there has been little analysis of the social sources of this resilience with a view to finding ways of supporting or extending it through policy. Such a research priority would correct an important area of policy neglect.

Questions for the future

A case has been made for the capacity of family farming based on the evidence of its long-term performance in 1960–2000, as suggested by available data. A parallel case can be constructed, using the findings of local level studies of farming and livestock producing communities in a diversity of situations (Wiggins, 2002). This is not attempted here. The final question is, given the evidence of the performance of family farming under *past and present* conditions, are there grounds for believing that it can continue to adapt and perform its basic functions effectively under *changing* conditions?

Any analysis of the past shows that an adaptive capacity is built into West African farming, and that the more risky the environment, the greater this adaptability is. By comparison, large-scale commercial systems are widely conceded to be specialised, and more dependent on constant access to inputs and markets as well as on non-variable growing conditions. This general argument may be reasonably used to support the case for family farming in West Africa, where alternative systems (with the exception of plantations in the humid zone) have a short history, a limited range of experience, and a chequered record of success.

- *Climate change: can family farms adapt?* Available scenarios of climate change do not permit a confident prediction of rainfall trends in West Africa, so the nature of this challenge (if any) to farming is unclear. Meanwhile, Sahelian farmers have already adapted to a greater change in average rainfall (25–30%, 1931–60 to 1961–90) than found in climate change scenarios.

- *Land scarcity: can they intensify?* Unfortunately there is insufficient recognition, in neo-Malthusian arguments linking land scarcity with degradation, of the dynamics of a transition from extensive to more intensive land use, dynamics which are handled at the level of the individual farm, in terms of day by day allocations of labour and capital. The emergence of indicators of intensification in national level data shows that this transition is not merely occurring as a local aberration to a general degradational decline.
- *Food sufficiency: can they continue to "feed the nation" with diminishing relative or absolute numbers of producers?* Demand for staple food commodities is unlikely to decline, given current rates of population growth and food preferences determined by both culture and poverty. The strongest evidence that family farms will continue to perform this function is the strength of recovery from stagnating food production in the 1980s. It is clear that economic incentives rather than capacity are the chief constraint.
- *Changes in livelihoods and in personal expectations: can family farming continue to attract labour and capital as livelihoods diversify, migration and urbanisation intensify, and social values change?* In West Africa, there are sharp differences between agricultural systems even within the same country with respect to the opportunity costs of agricultural labour; much north-south and trans-border migration is related to these differences. The only honest answer to this question is to "wait and see" how intensifying patterns of interaction, producer price trends, wages in alternative occupations, and the social value of land (among other factors) evolve.
- *Global markets: can family farms compete?* Probably the greatest unknown in answering the previous question is the future impact of competitive (and – on experience until now – unfair) global markets on economic incentives in West African agriculture. Compared with commercial agriculture, family farming undervalues a large proportion of its labour inputs (unpaid family labour); by this or other means, food sufficiency has often been achieved in the face of stagnant or declining prices. Competition with imported food has been both overt (e.g. in Senegal – rice, Côte d'Ivoire – meat) and covert (e.g. through persistent food aid in Sahelian countries). The ending of surplus disposal in food aid by the USA, as in the EU would appear to be a precondition for optimising market incentives for family farms or large-scale commercial farms alike.[25] The competitiveness of family farming in domestic markets is also linked with the resilience of cultural food preferences. In overseas markets, competition damaged some export agriculture irreparably – for example, Nigerian palm oil exports, which could not compete with those of Malaysia. However this was due as much to unfavourable currency exchange rates as to producer incapacity, and the same factor that led to an over-valued currency (oil) also stimulated a compensating increase in domestic demand. Not withstanding recent promotion of export agriculture as the only escape route from economic stagnation in African countries, the long-term data do not in general point to significant efficiency improvements or major increases in output.
- *Closer regional integration: a threat or an opportunity?* The agro-ecological similarity of many West African states limits the scope for regional exchange of agricultural commodities. However, family farming is structurally linked with income diversification at the household level, and opportunities to move labour and skills around the ECOWAS countries are beneficial to rural areas especially where the opportunity for agriculture is seasonally adjusted. In such areas, the flexibility of family farming with regard to labour and capital allocations is its greatest merit.
- *The 'livestock revolution': cause of conflict or agency of integration?* There is a global trend towards eating more meat associated with gradual increases in incomes, and if reproduced in West Africa, this may alter the relative incentives for producing crops and livestock. Already, in the eyes of some observers, animal production is under threat from the conversion of natural pastures to farmland. However, there are also signs of increasing integration on farms where animals complement crop production rather than compete with it. Fodder crop production is not yet competitive with food or export crops in most parts of West Africa, though some crops with high-

[25] The EU has ceased to use food of European origin, having adopted a policy of food aid in cash for purchases within the famine-affected region (EU Trade Commissioner, 17/1/03).

value residues are experiencing rapid increases in price and/or output (cowpeas, groundnuts). The answer to this question depends on which viewpoint is embraced: in areas where crops can be grown, exclusive use for pasture or cultivation creates a conflict that will be exacerbated by increased competitive prices for livestock; but integrated use offers an opportunity for the best of both worlds, and is ideally suited to the circumstances of small farmers.

These questions do not exhaust the range of uncertainty about the future course of change. However, they suggest that family farming is likely to offer as viable a strategy as any alternative – while retaining the flexibility and autonomy necessary for autonomous rural communities in a time of opportunity and challenge.

Additional case study evidence: Farm and non-farm investments in Maradi, Niger

Rural households in Maradi Department are used to making productive investments in livestock and new crop production technologies. Current priorities for household investment still include investments in livestock and, increasingly, land (Hamadou, 2000a). Investments are now more diversified than before. Many people invest in land. Women's focus is on livestock, while men's is on agricultural production, especially for the market. Many young men invest in migratory strategies (Diarra Doka, 2001). With income diversification and devaluation, investment in prestige items has increased.

Much investment goes into domestic structures. The methods of house building are starting to change, from circular mud huts with thatched roofs to rectangular mud *soro* houses (where a source of clay exists). Cement and metal sheets are being used for roofs (Diarra Doka, 2001). These changes involve greatly increased costs, and as improved houses are first constructed by the well-to-do, their appearance in any number provides an indicator of increasing wealth in the community.

If farm investment is restricted in meaning to major fixed cost items obtained through markets or on credit, such as ploughs or other new technologies, it should not surprise us that the capacity of poor rural households to invest has been rather limited. Le Gal found an association between holdings of more than 10 hectares and the use of animal traction, modern inputs (fertiliser, improved seeds and chemical treatments), and hired labour (Grégoire and Raynaut, 1980:144–7). However, some farms of two hectares or less used modern inputs, and some without animal traction nevertheless hired labour. This absence of a clear distinction between "modernising" and other farms points to the presence of a perception that investment is essential, notwithstanding the constraints under which small-scale and poor farmers work.

The statistics of land use change are the measure of this process in Maradi. Between 1972–73 and 1994–5 an additional 1,400,000 hectares were cleared (Hamadou, 2000a/b: Table 11).

Farm investments occur on the frontier of technological change and adaptation. In changes in agronomic practices, a division may be made between those that require significant monetary funds and those that do not (Table A: Amoukou, 2000: internal report).

From these data it may be seen that the trend to capitalisation (requiring funds) has been strongest in the southern, wetter and more market-accessible villages, but that in the most risky village, Dan Kullu, some farmers have both capitalised and intensified using additional labour (more dry sowing and weeding).

Table B shows that in acquiring major farm equipment, credit played a minor (even insignificant) role alongside private finance. Amoukou reports that the majority of major farm investments were made during the last 10 years. Hamadou found investments increased after the devaluation of the CFAF in 1994, which had resulted in a rise in farm prices (Table C). Credit was then less available, though some was provided by CARE. The sources of this private finance were agricultural incomes

(Amoukou, 2000: Table C), though the possibility that off-farm incomes also contributed is not excluded by the data.

Table A: Trends in the use of certain agronomic practices from more than 30 years ago to the present

Practice	Jiratawa	Magami	Sharken Hausa	Dan Kullu
Requiring few funds:				
Bush clearing	=	=	=	=
Tillage, hand	-	=	=	=
Dry sowing	-	=	=	+
Sow after rain	=	=	=	=
No. weedings*	=	=	=	+
Hand weeding	=	=	=	=
Requiring funds:				
Tillage, plough	+	+	none	+ (one)
Treating seeds	+	+	+	+
Sow by seeder	+	+	none	+
Improved seeds	+	=	+	+
Weeder/ridger	+	+	none	none

Source: Amoukou (2000)

= no change - decrease + increase
* Normally two, increasing to 3 in villages shown +

Table B: Mode of acquisition of major farm investments during the past 20 years, four villages

Investment	Credit	Purchase	Lease
Plough	3	17	1
Seeder	0	7	1
Cart	3	15	0
Weeder/ridger	0	4	0
Oxen	3	16	3
Total	9 (12%)	59 (81%)	5 (7%)

Source: Amoukou (2000)

Table C: Year of acquisition of new capital equipment

	Plough oxen	Ox cart	Heavy plough	Light plough	Bicycle*	Motor cycle**
To 1994	1	8	10	4	2	0
1995 onwards	18	9	2	34	6	4

Source: Hamadou (2000a/b)

*1 in Dan Kullu (remainder in Jiratawa) ** All in Jiratawa

The profiles of private investment financing varied significantly among villages. Farmers in Jiratawa, with irrigation, ranked their sources in the same order for the past 30 years, with crop sales at the top. Farmers in Magami, mainly rain-fed, though starting similarly, shifted animal sales and trade to higher rankings during the past ten years. Farmers in Sharken Hausa, less market-accessible, drier and rain-fed, ranked animal sales first and scarcely changed the rankings of their other options. But those in Dan Kullu, the driest and least accessible, switched from animal sales to crops and then to trade as their first, raised animal fattening from fourth to second ranking, and depressed crop sales.

Nevertheless, the proportion of farmers selling cereal grain (mostly millet) at the present time increases northwards. These rankings conform accurately to what we know of the constraints and opportunities facing these differentiated communities. In all four, mineral fertilisers were the most important purchased input, hired labour the second, and new or treated seed the third. These rankings did not change during the 30-year period.

Table D: Rankings of investment sources for agriculture, from 30 years ago to the present

	Jiratawa	Magami	Sharken Hausa	Dan Kullu
30 years ago	crop sales	crop sales	large rum.	large rum.
	large rum.	large rum.	small rum.	crop sales
	small rum.	small rum.	trade	small rum.
	fattening	trade	fattening	fattening
	trade	fattening	crop sales	trade
20 years ago	crop sales	crop sales	large rum.	crop sales
	large rum.	large rum	small rum.	large rum.
	small rum.	trade	trade	trade
	fattening	small rum.	fattening	small rum.
	trade	fattening	crop sales	fattening
Last 10 years	crop sales	large rum	large rum.	trade
	large rum.	crop sales	small rum.	fattening
	small rum.	small rum.	trade	crop sales
	fattening	trade	crop sales	large rum.
	trade	fattening	fattening	small rum.
Selling cereals	0/10	2/10	5/10	5/10

Source: Amoukou (2000)

rum. = ruminants

Although these findings result from a very small sample, they dispel the myths that no farmers can finance investment and that they do not know how best to manage their investments in a dry, high-risk environment. Not every farmer, of course, has investment capacity, and that of the most successful is still less than they would wish. Investing farmers are better off, but by no means wealthy, and they include women.

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ANNEX 4B:

THE FUTURE OF FAMILY FARMS IN WEST AFRICA
WHAT CAN WE LEARN FROM LONG-TERM DATA?

- SUPPORTING GRAPHS AND FIGURES -

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Fig. 1 Total agricultural imports by value

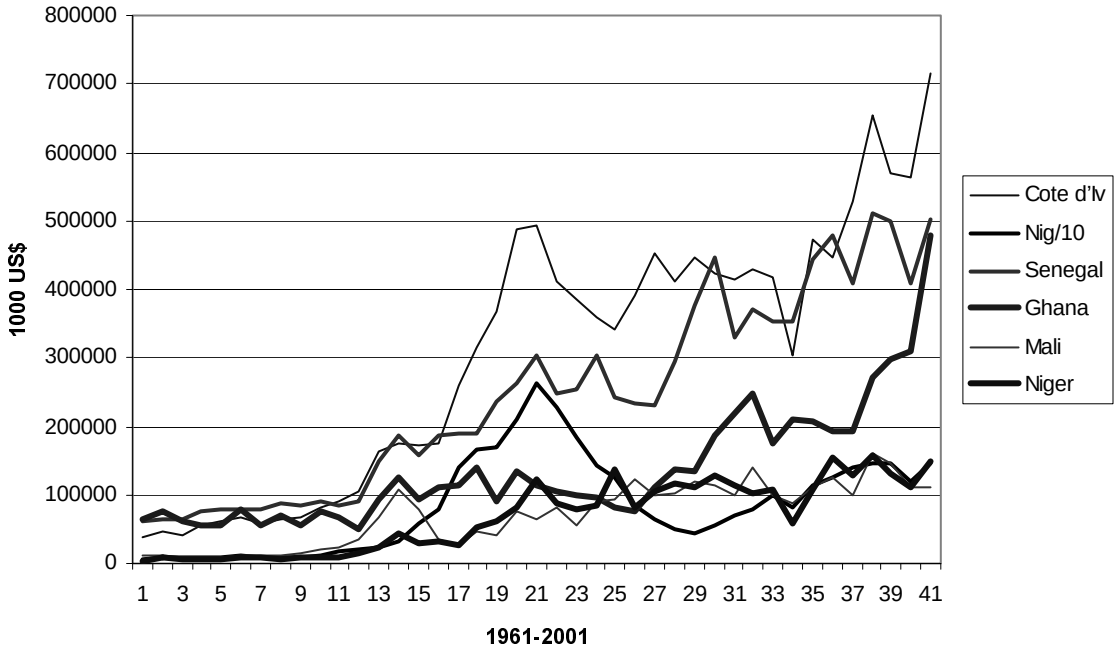

Fig. 2 Total agricultural imports (US$/capita)

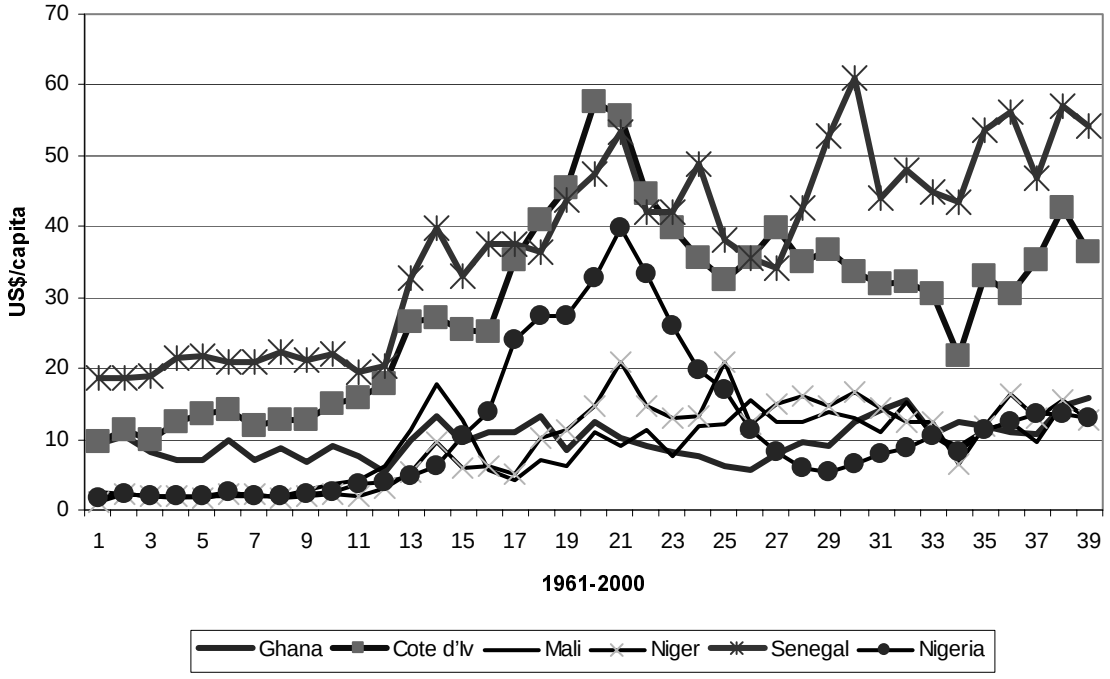

Fig. 3 Selected food imports: Nigeria, Côte d'Ivoire, Senegal

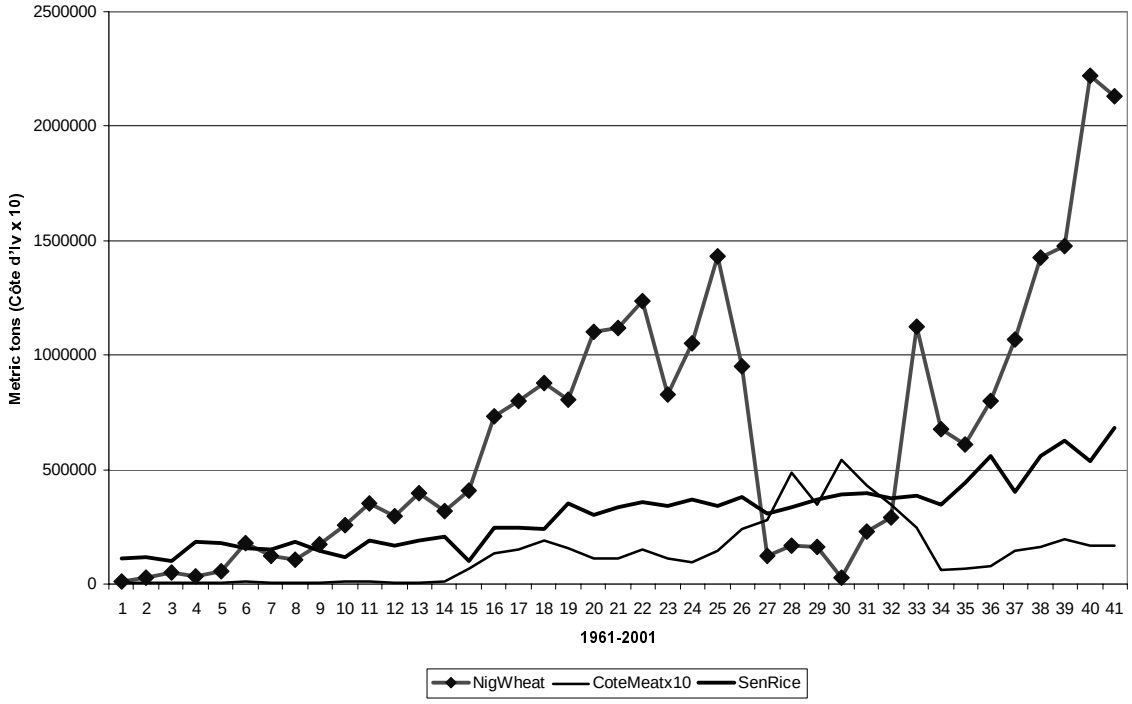

Fig. 4 Cocoa beans and coffee bean exports: Côte d'Ivoire

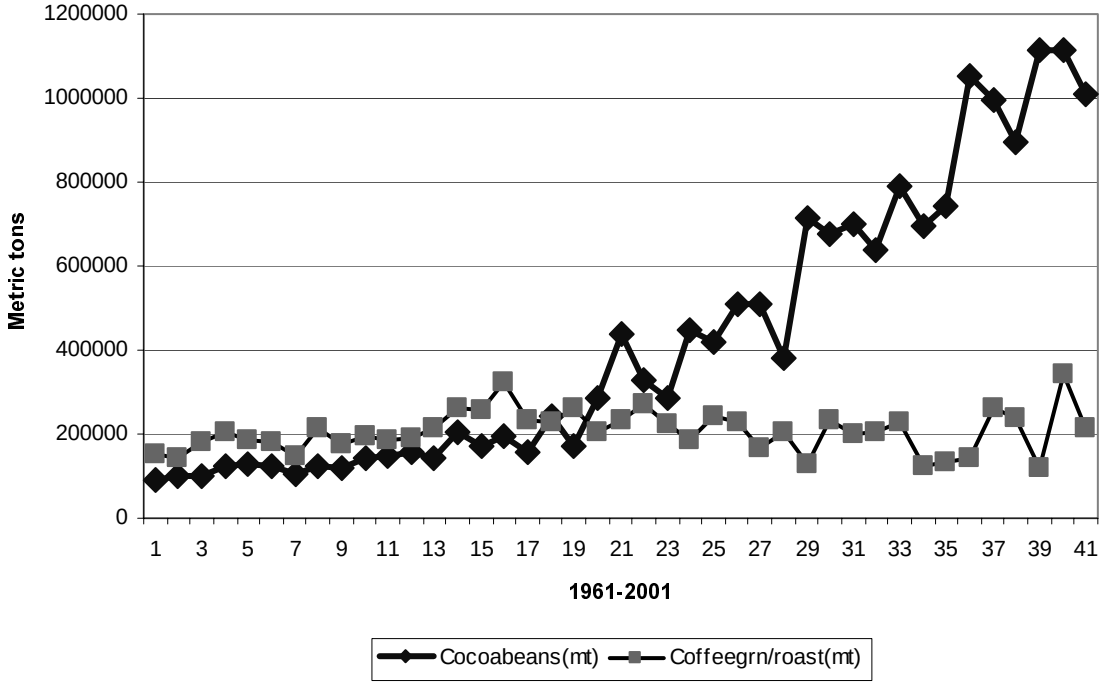

Fig. 5 Cocoa beans and coffee beans exports: Ghana

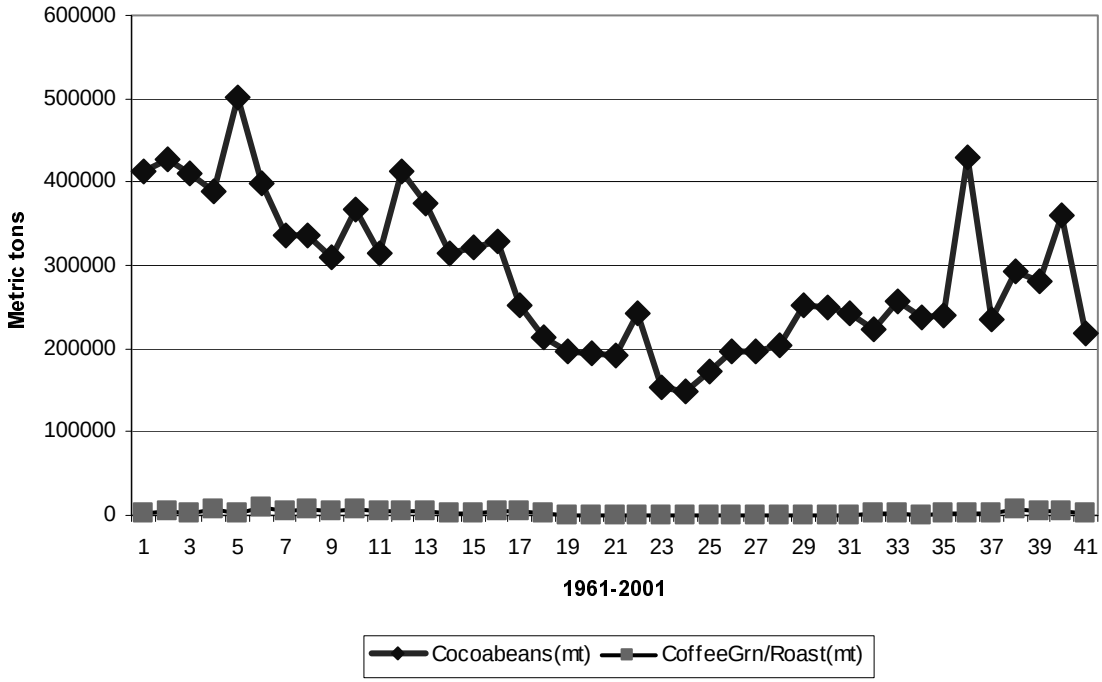

Fig. 6 Cotton, groundnut, and groundnut oil exports: Niger

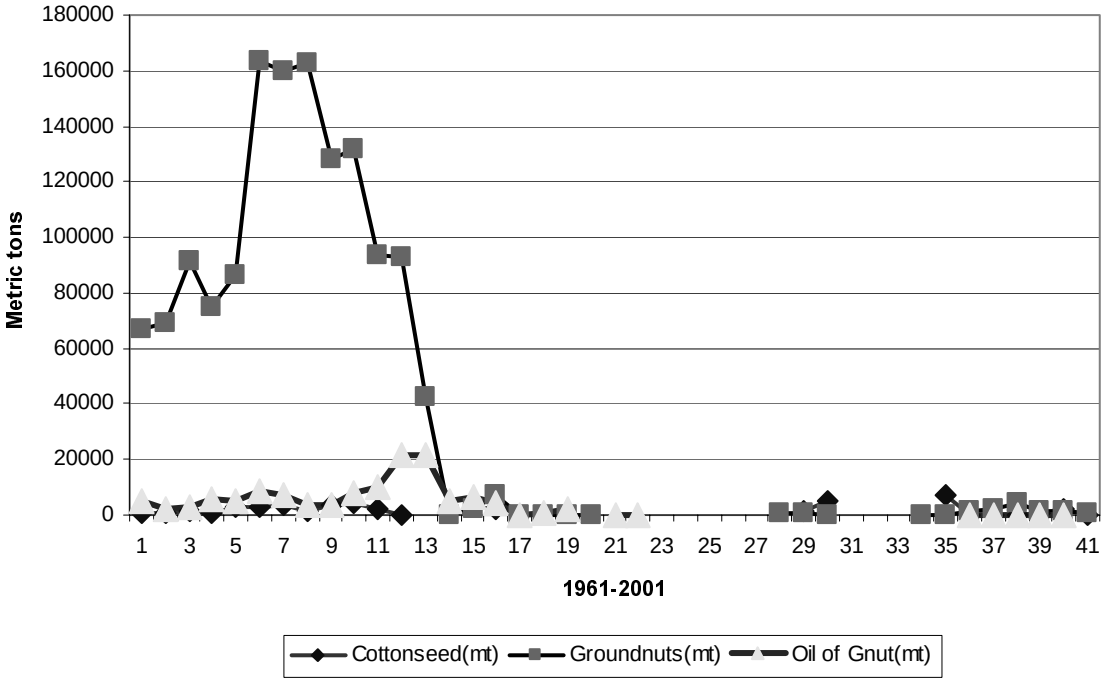

Fig. 7 Cocoa beans, cottonseed, groundnut, palm oil and kernels exports: Nigeria

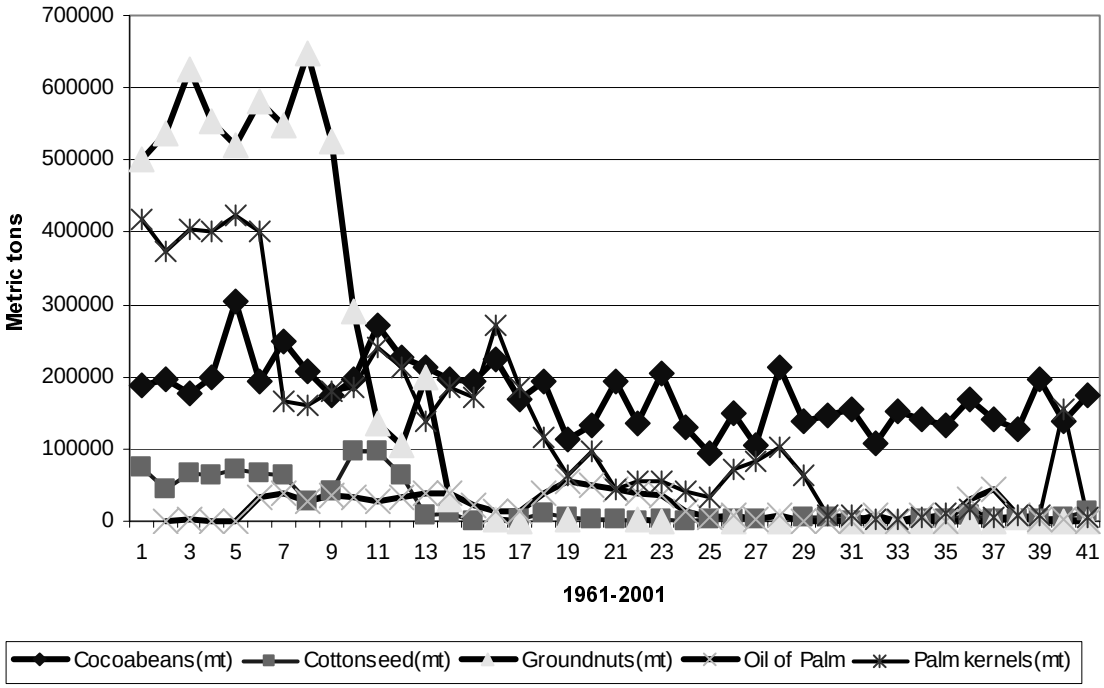

Fig. 8 Groundnut and groundnut oil exports: Senegal

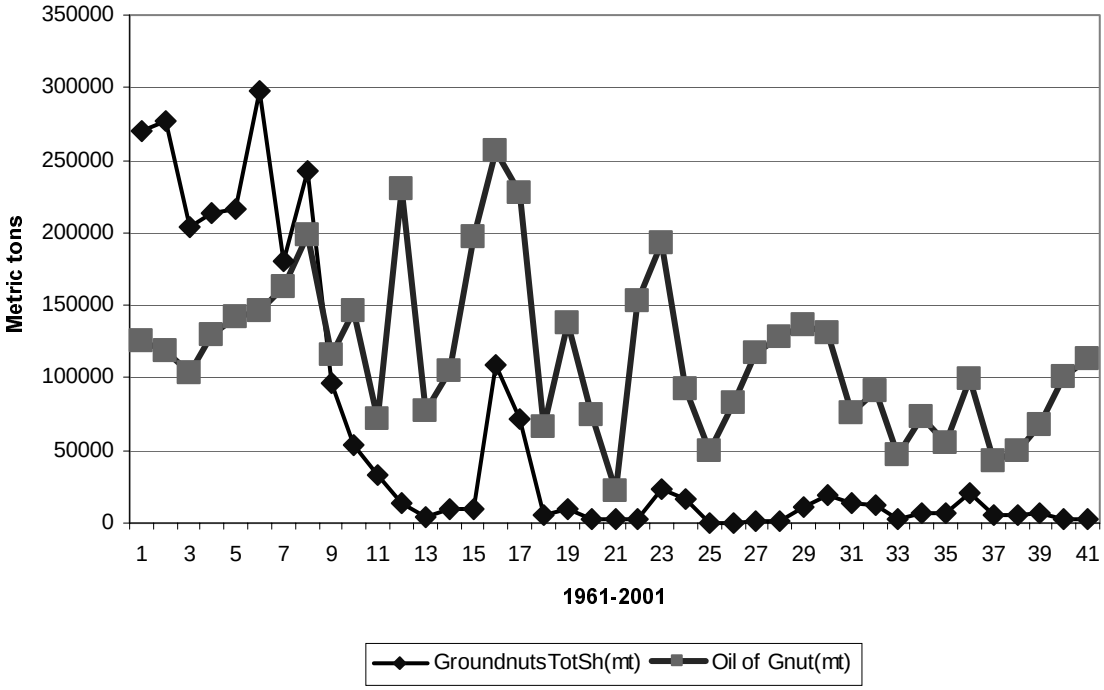

Fig. 9 Cottonseed exports: Mali

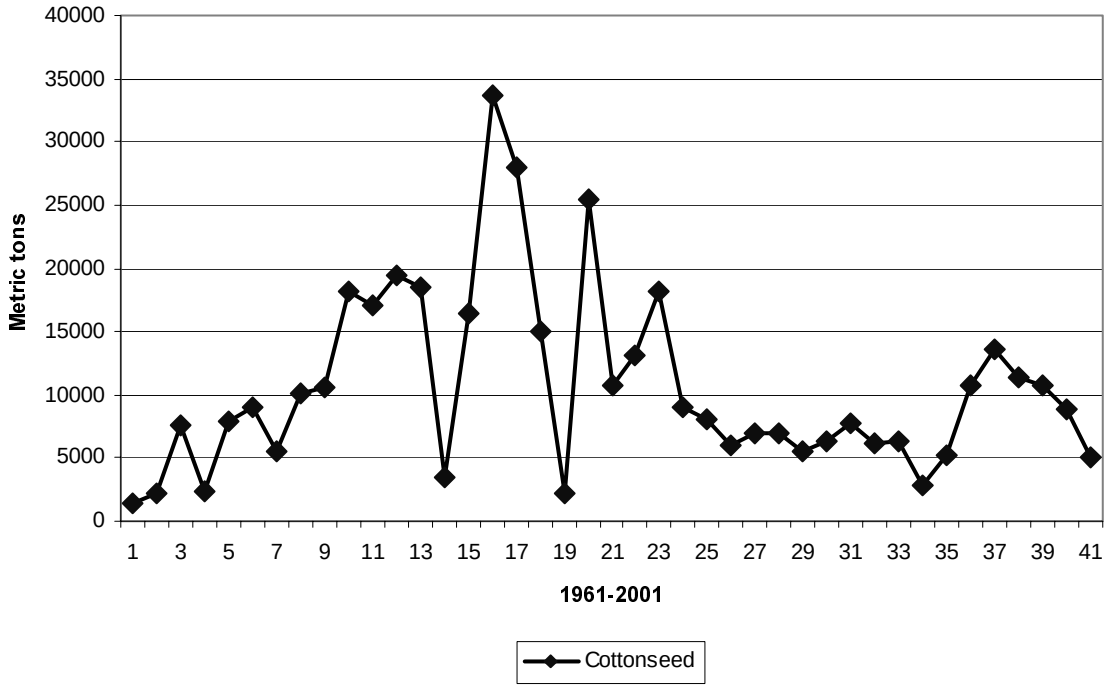

Fig. 10 Annual rainfall, Kano (upper) and Zinder (lower), with 5-yr mean, 1916-1999

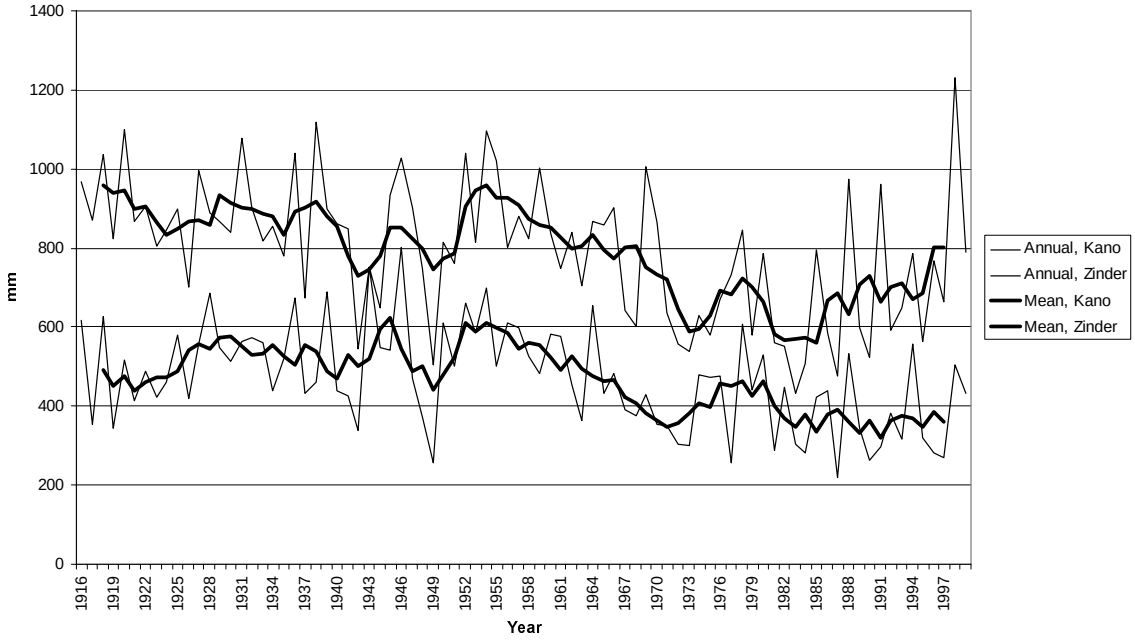

Fig. 11a Total population

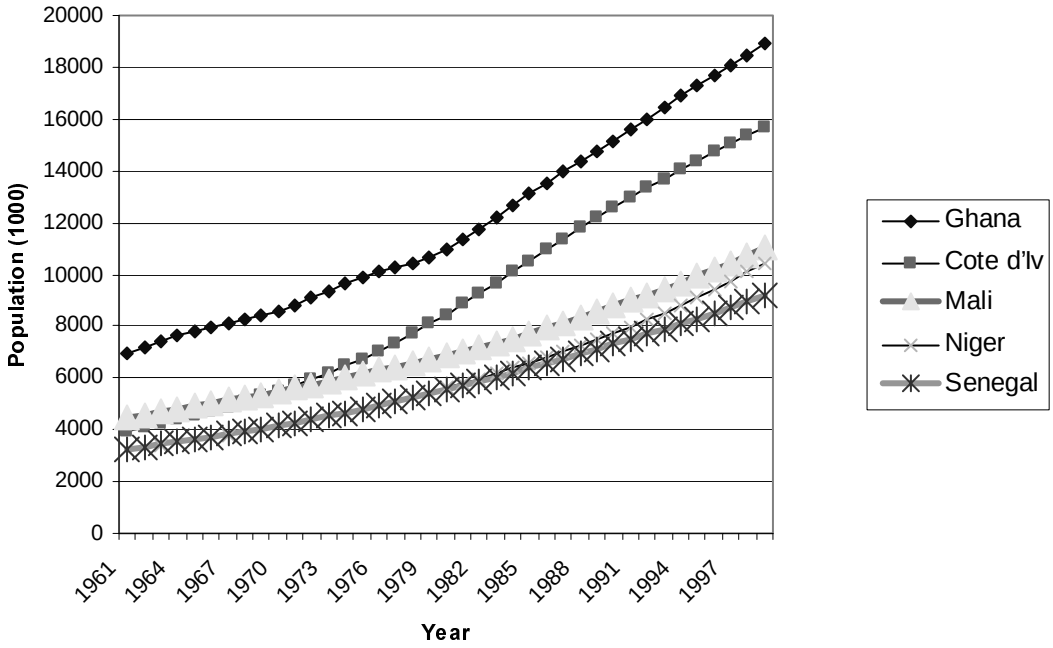

Fig. 11b Total population: Nigeria

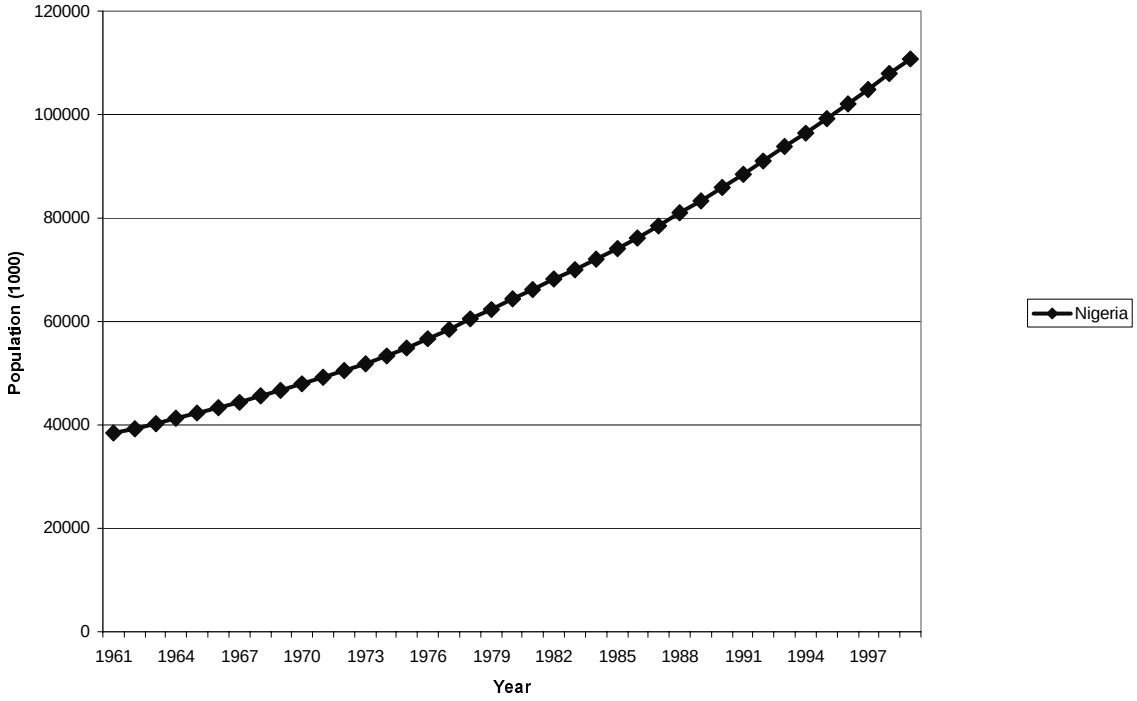

Fig. 12a Agricultural population

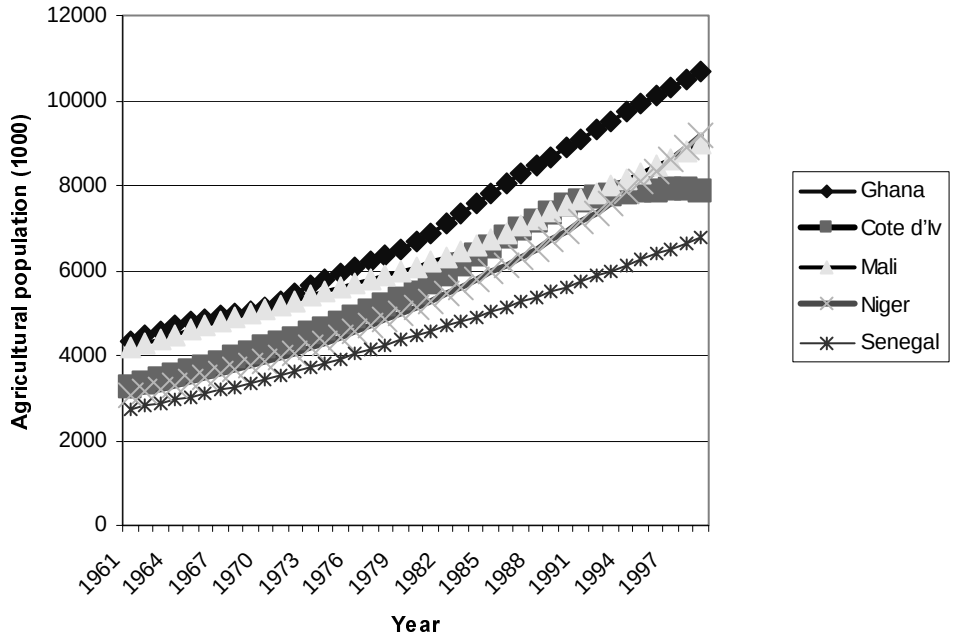

Fig. 12b Agricultural population: Nigeria

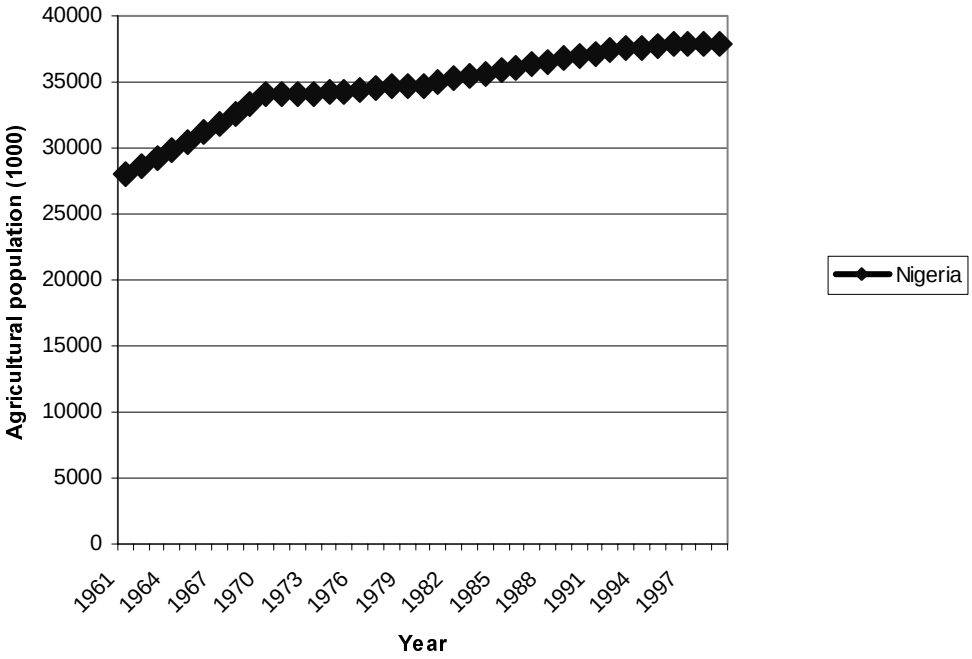

Fig. 13 Cropland and agricultural population: Ghana

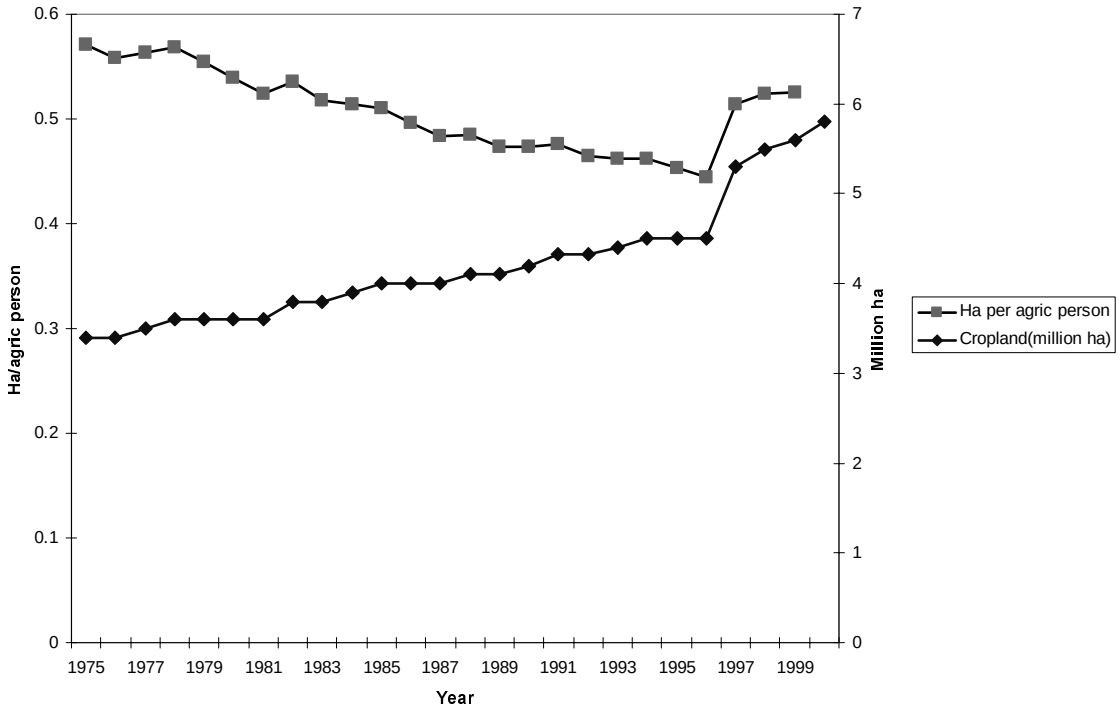

Fig. 14 Cropland and agricultural population: Côte d'Ivoire

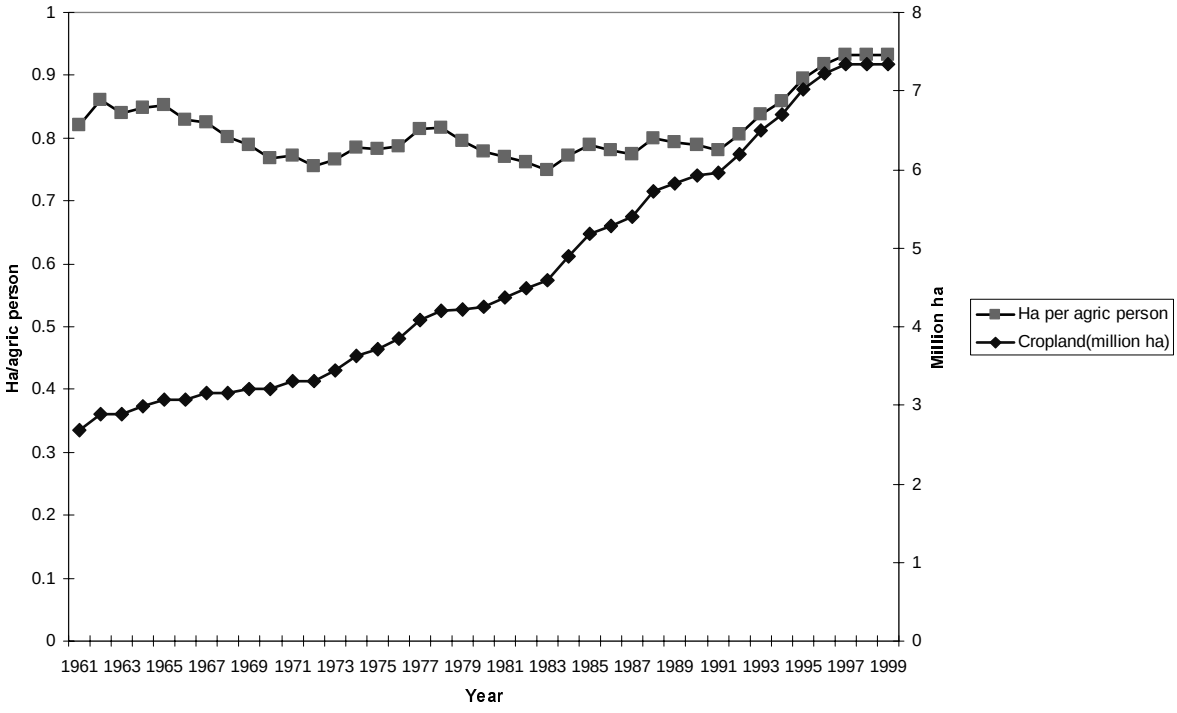

Fig. 15 Cropland and agricultural population: Niger

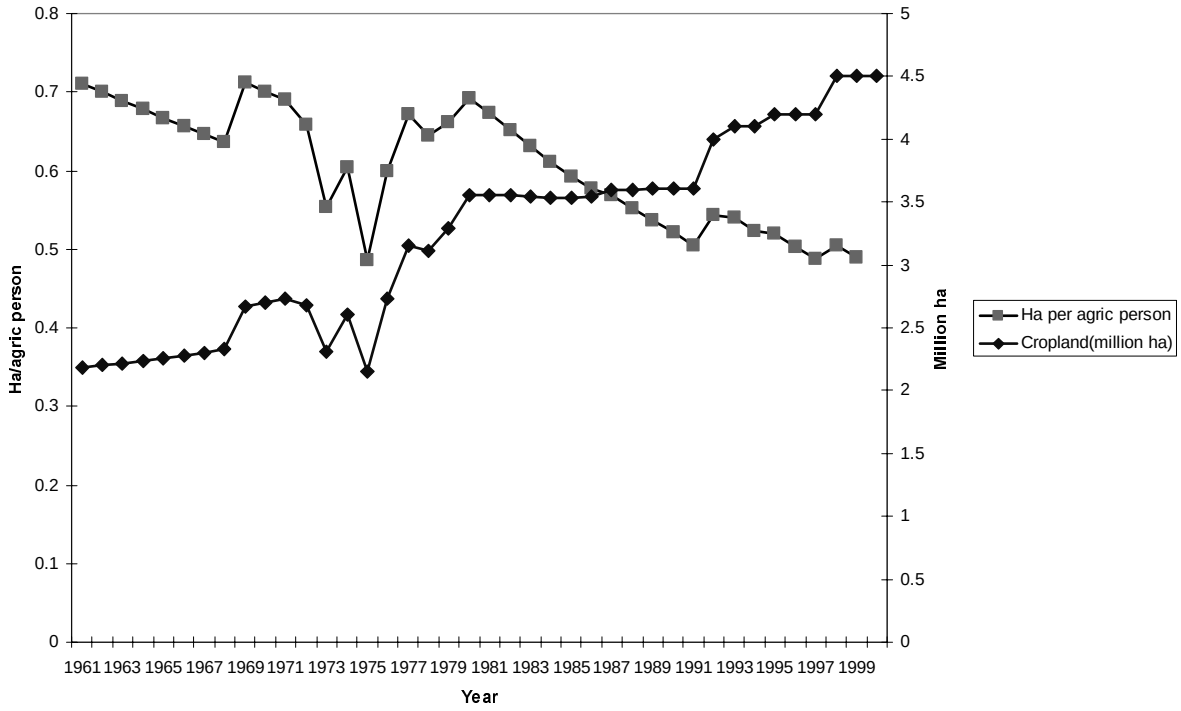

Fig. 16 Cropland and agricultural population: Nigeria

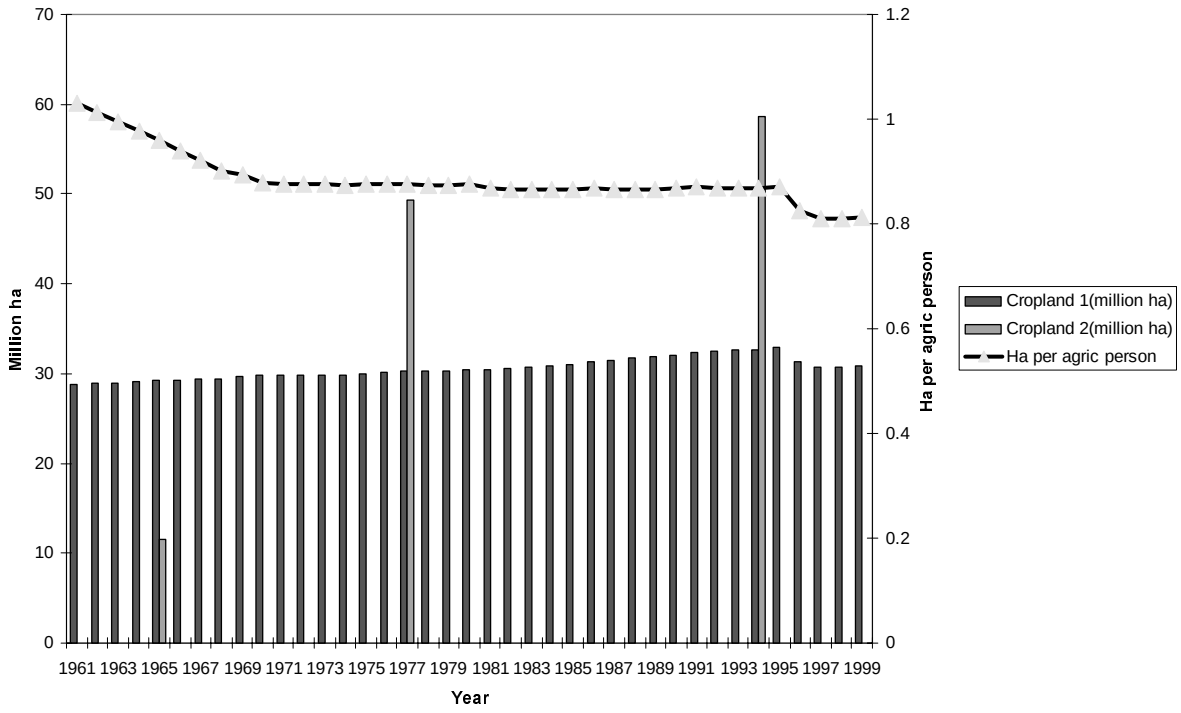

Fig. 17 Food (net) per caput indices

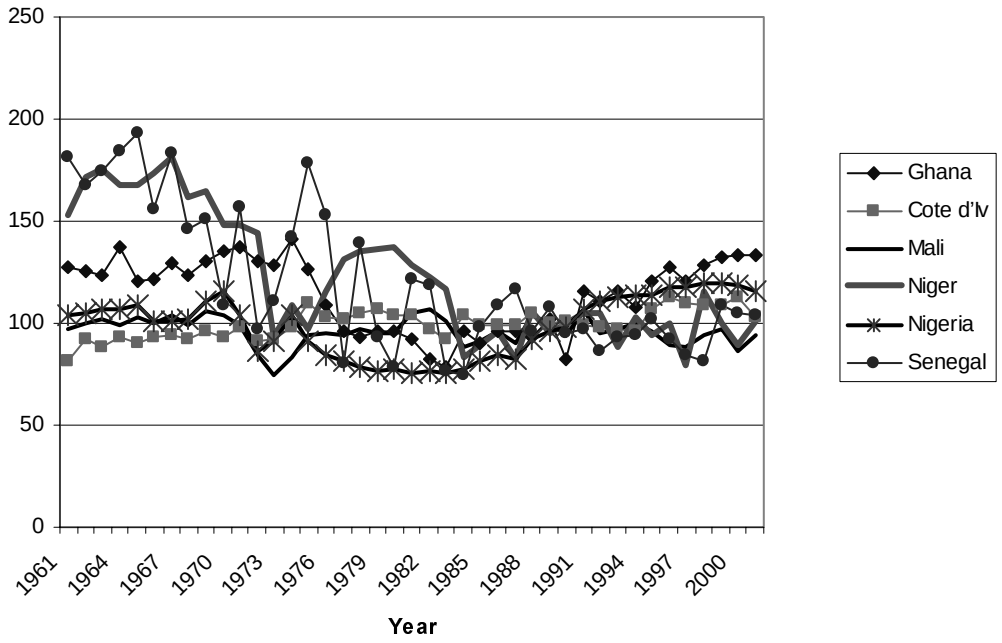

Fig. 18 Cereal crop production: Ghana and Nigeria

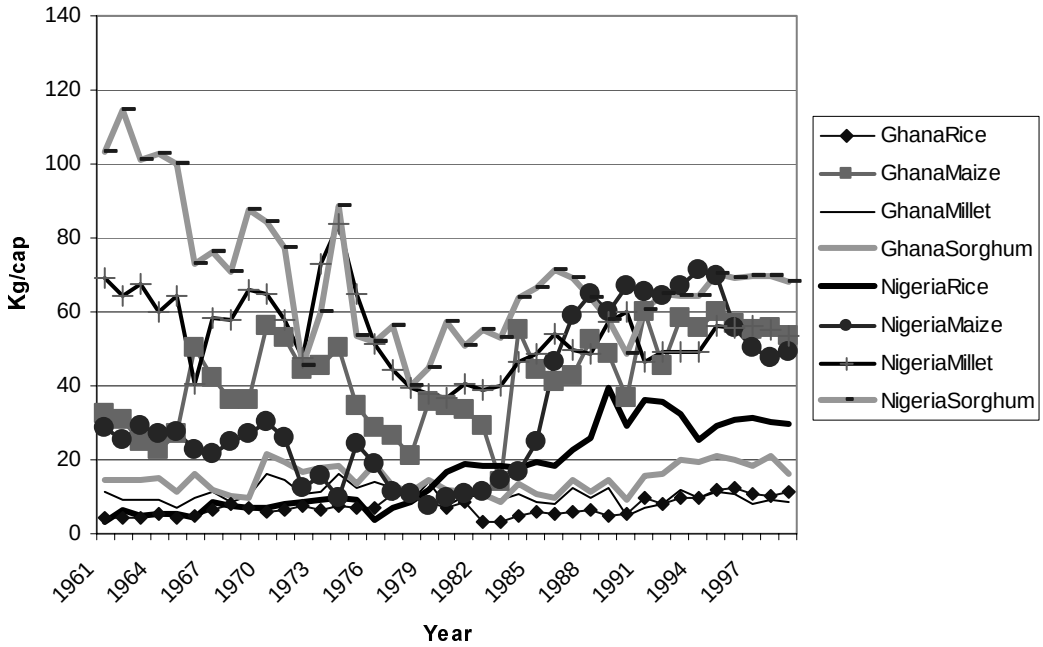

Fig. 19 Root and forest crop production: Ghana and Nigeria

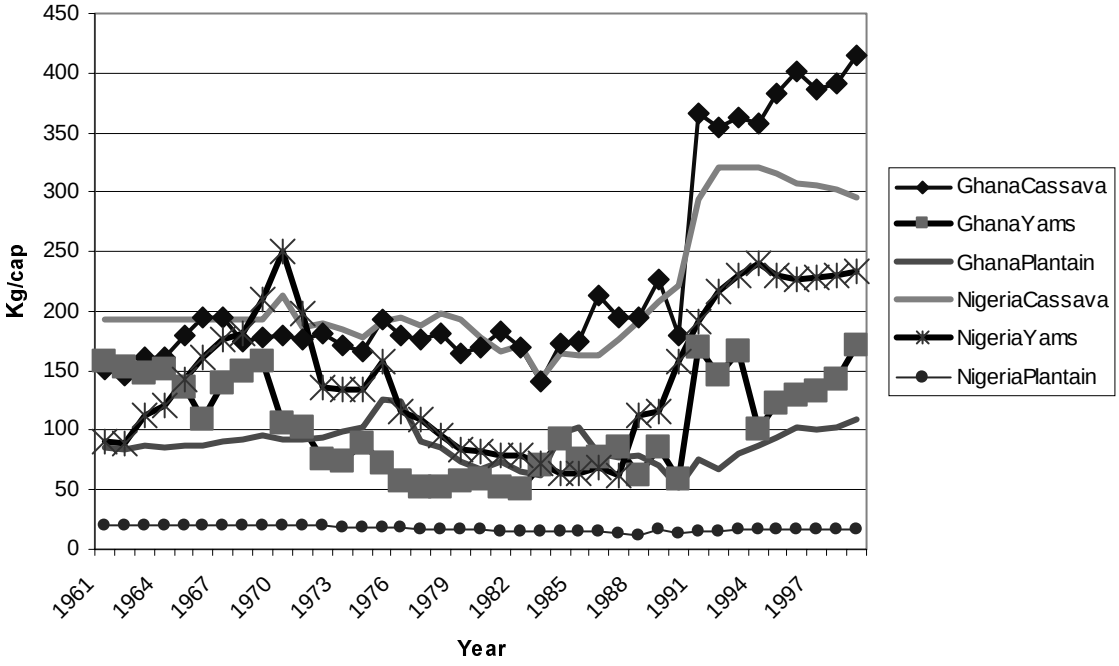

Fig. 20 Grain crop production: Senegal and Niger

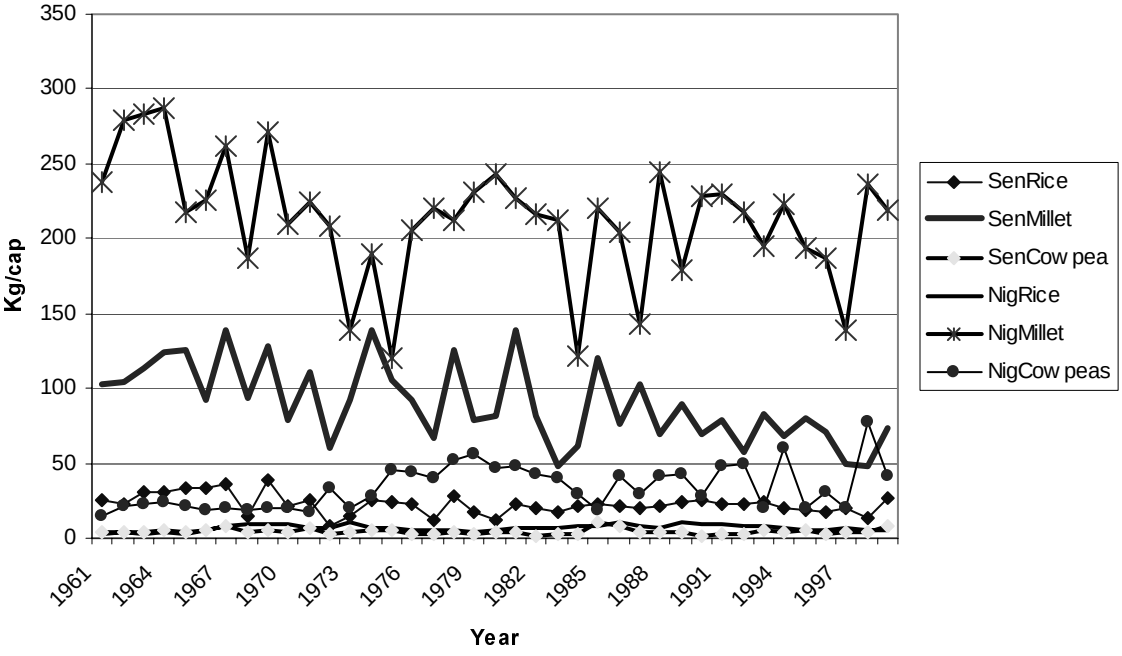

Fig. 21 Crop production: Côte d'Ivoire

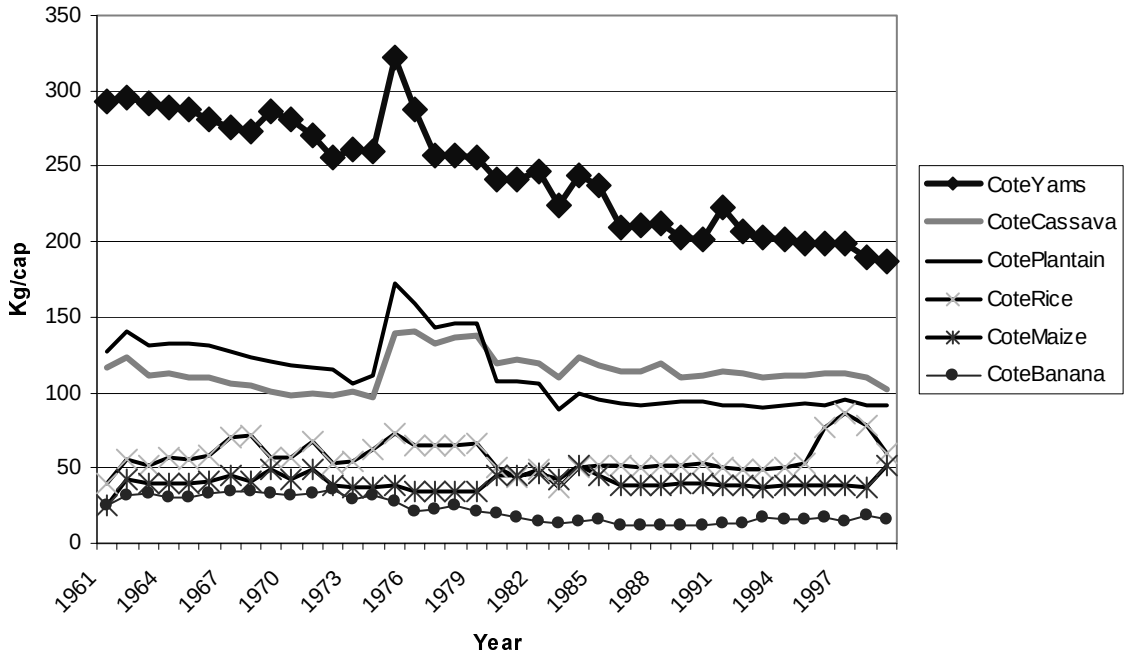

Fig. 22 Crop production: Mali

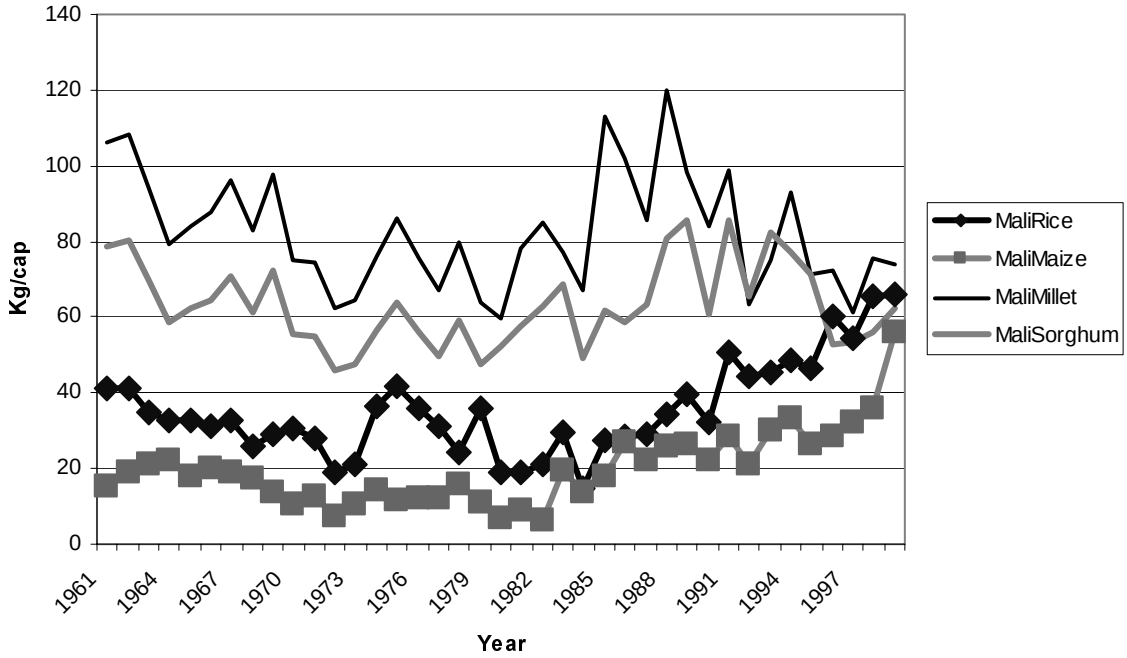

Fig. 23a Millet yields: Niger

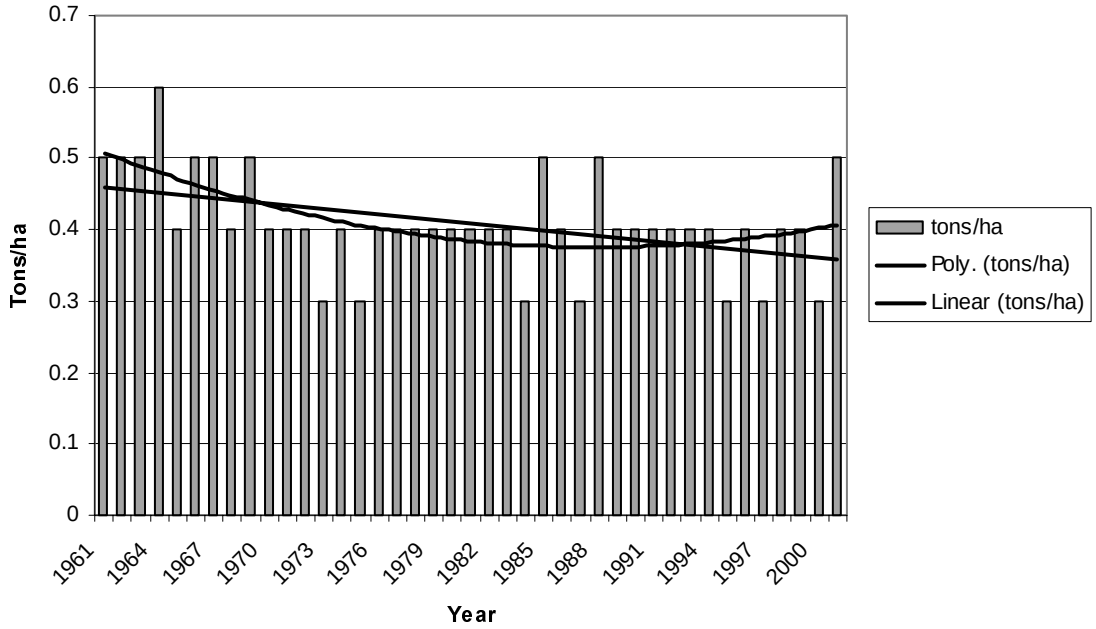

Fig. 23b Millet yields: Mali

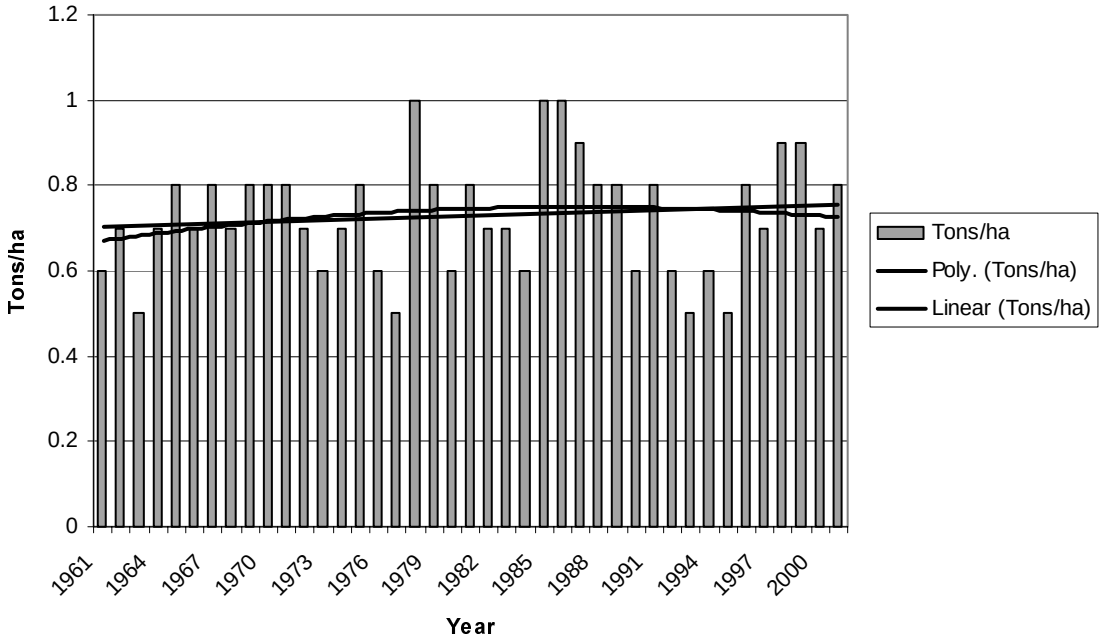

Fig. 23c Millet yields: Nigeria

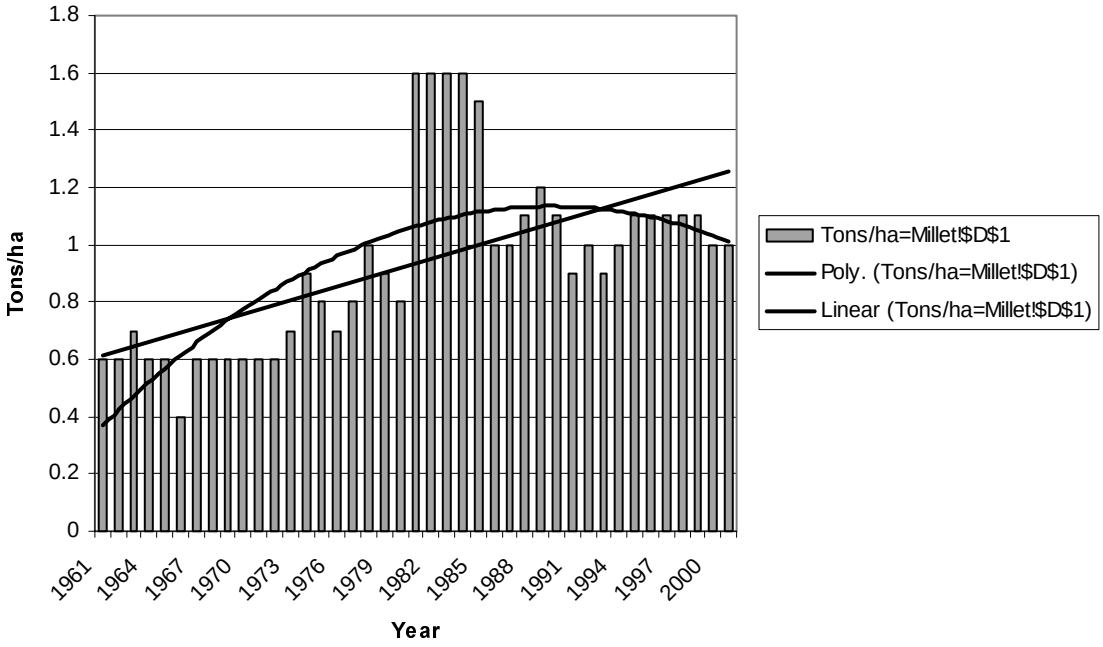

Fig. 23d Millet yields: Senegal

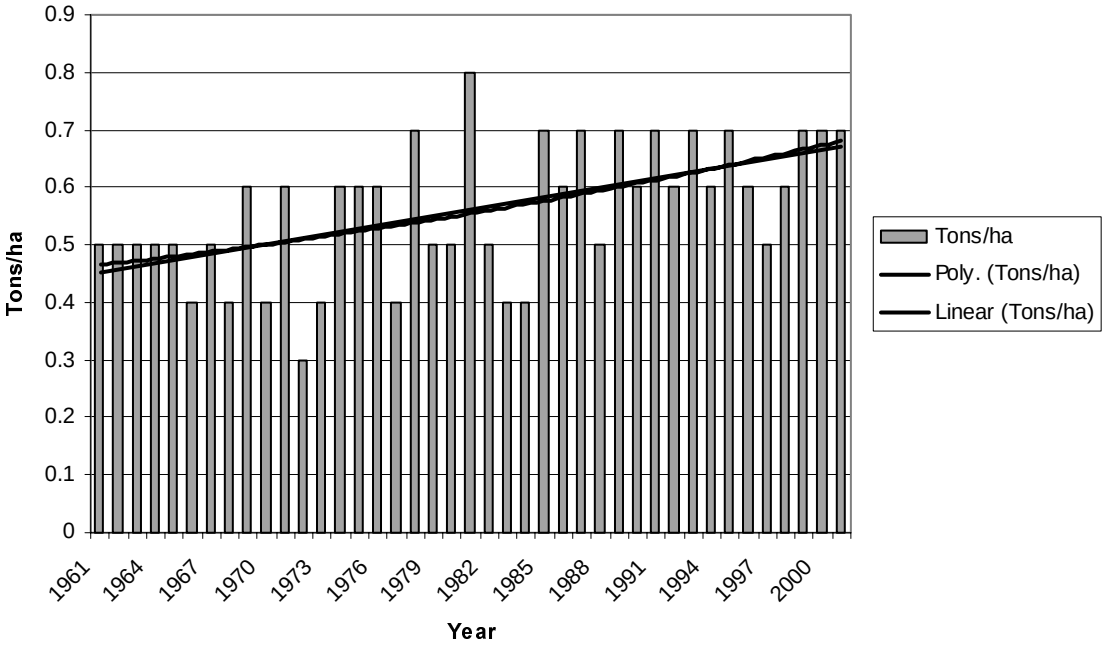

Fig. 23e Millet yields: Ghana

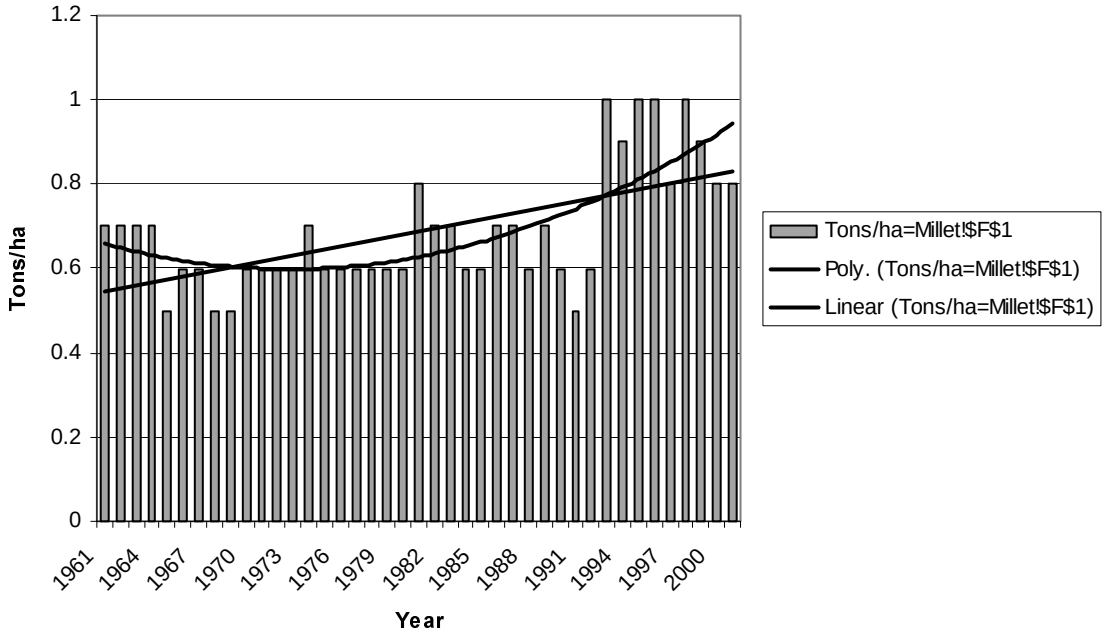

Fig. 23f Millet yields: Cote d'Ivoire

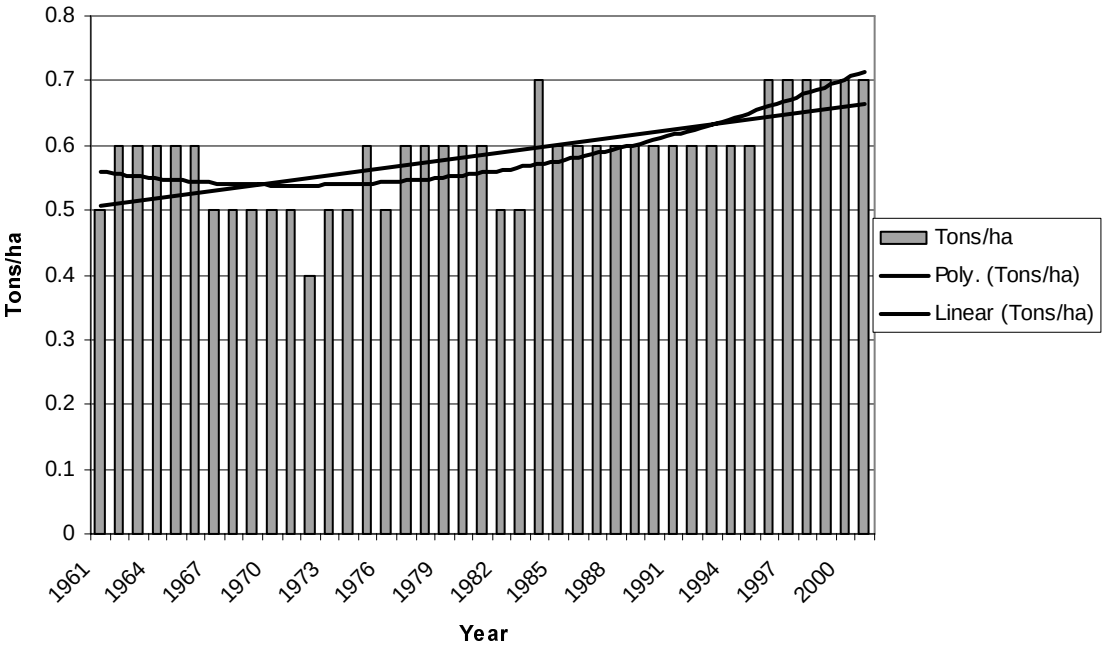

Fig. 24a Maize yields: Niger

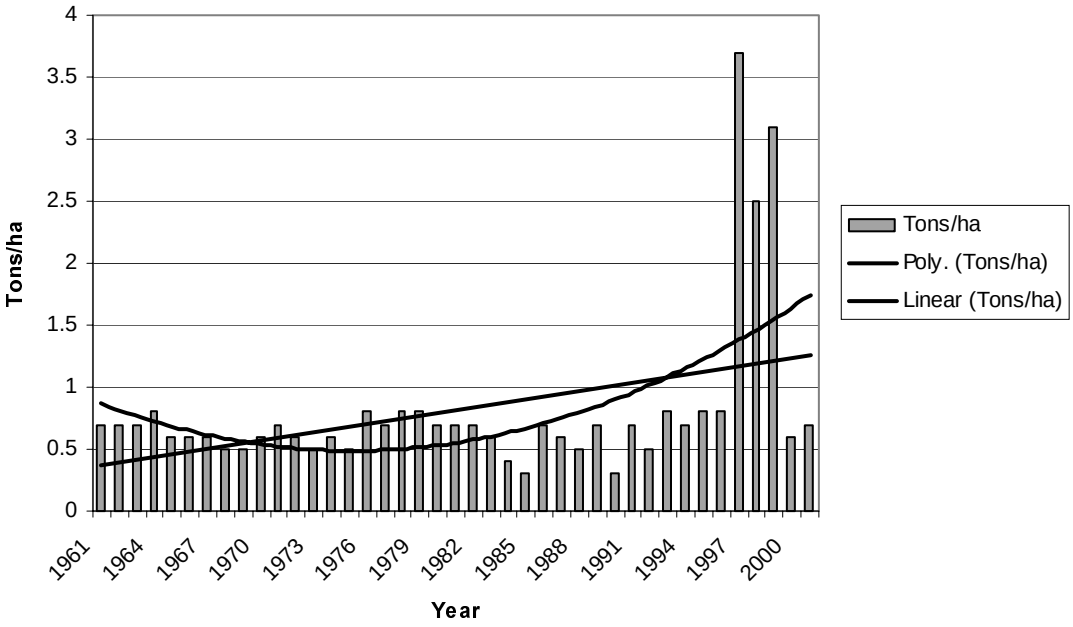

Fig. 24b Maize yields: Mali

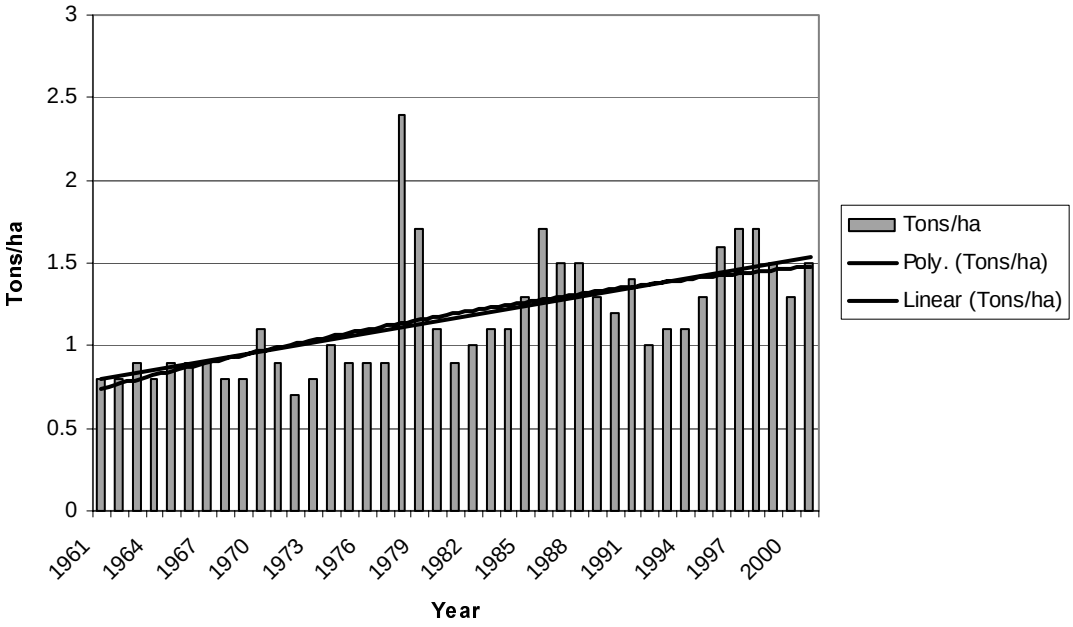

Fig. 24c Maize yields: Nigeria

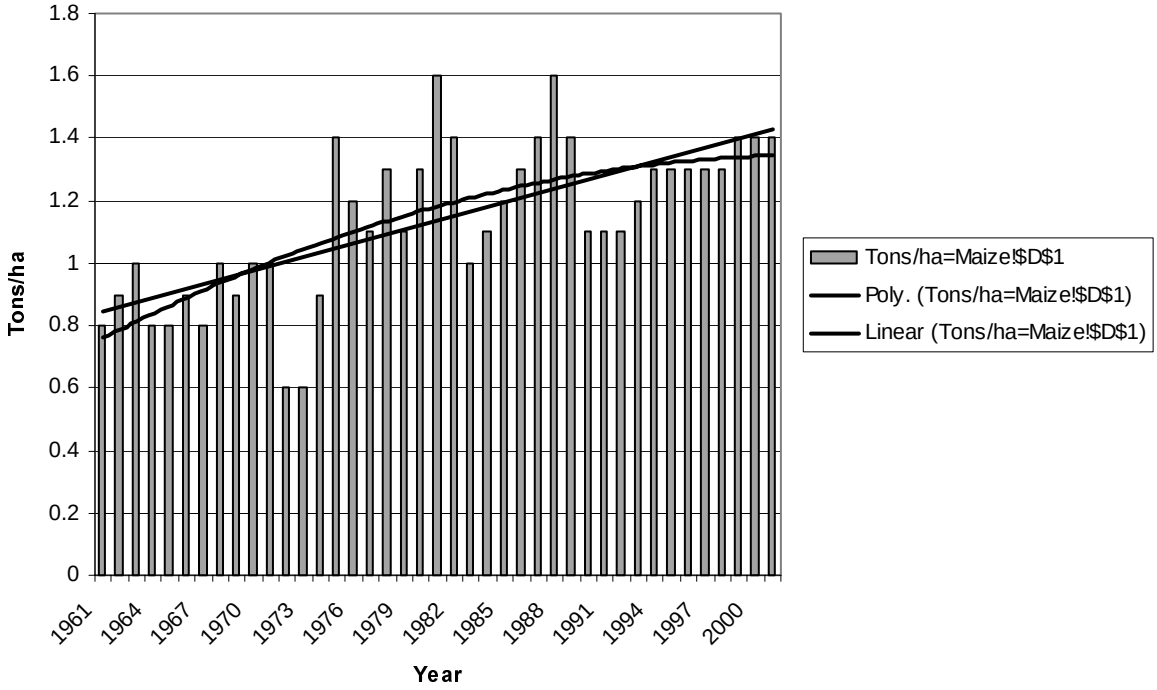

Fig. 24d Maize yields: Senegal

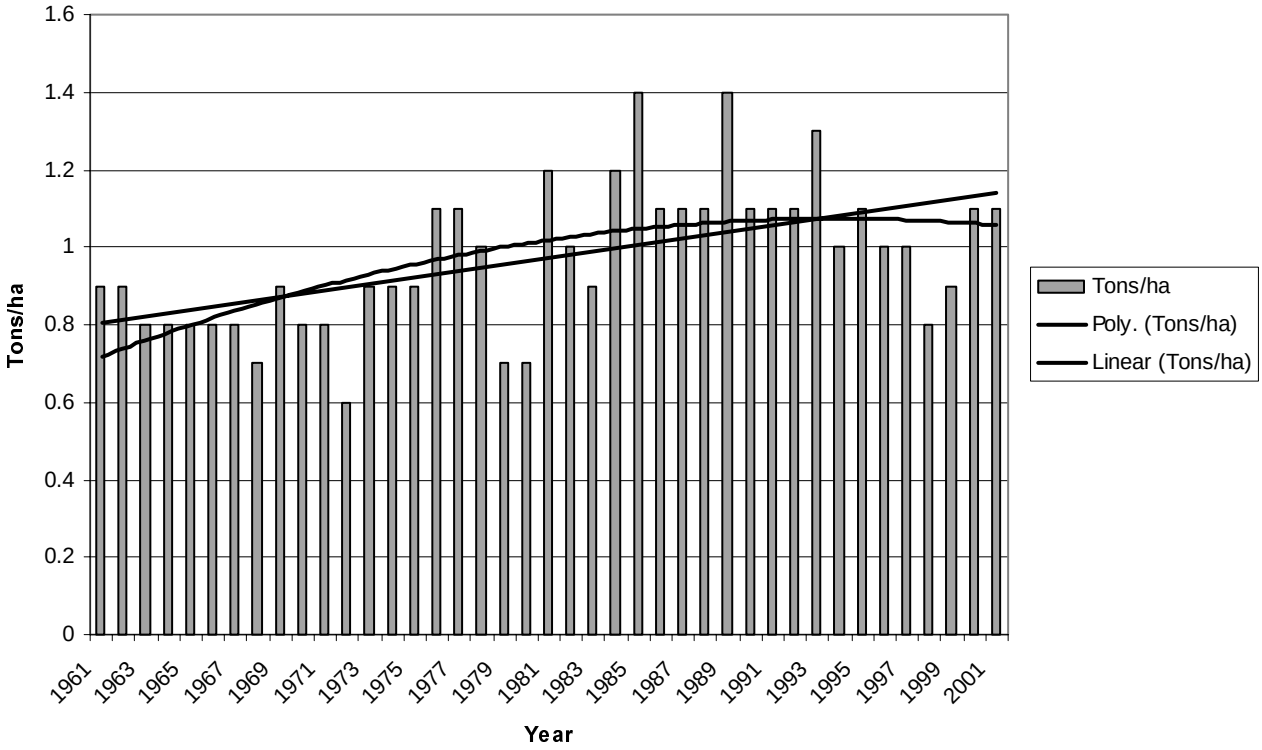

Fig. 24e Maize yields: Ghana

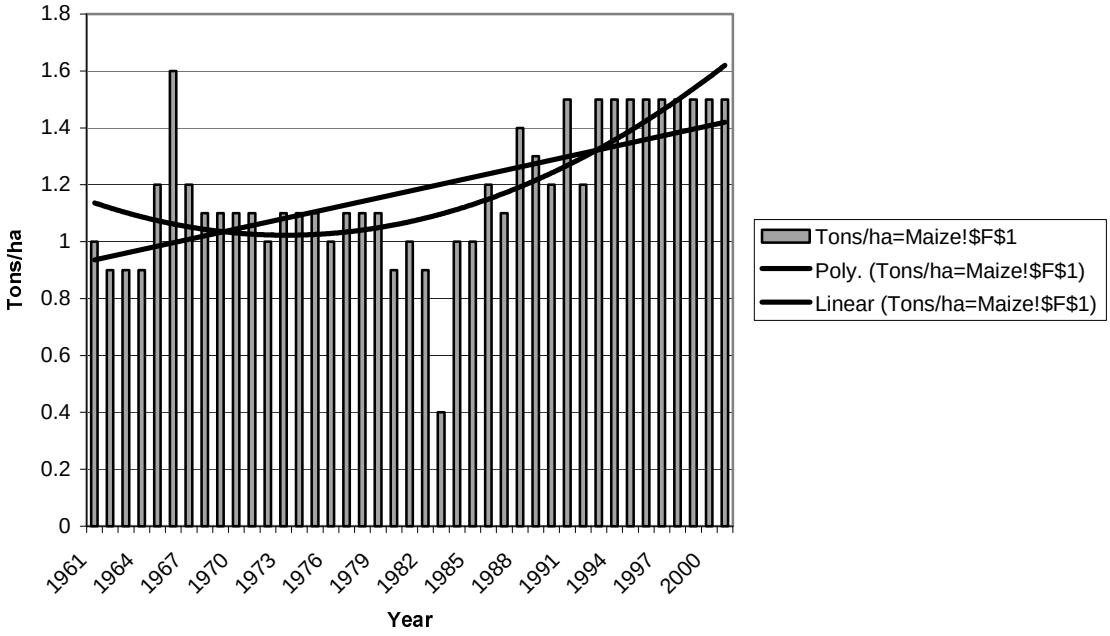

Fig. 24f Maize yields: Côte d'Ivoire

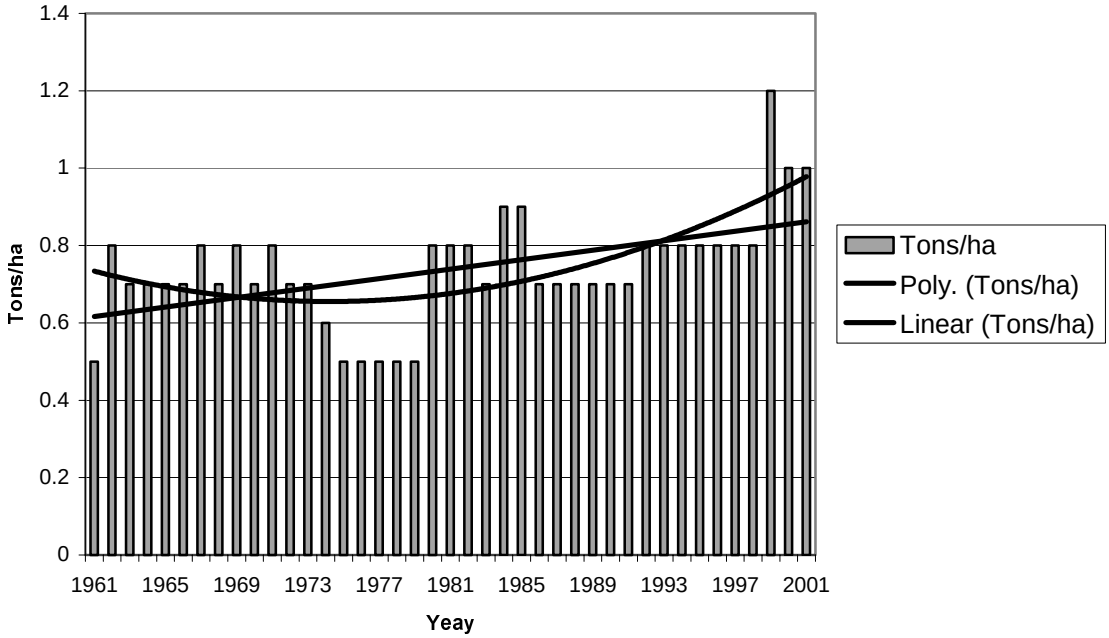

Fig. 25a Cassava yields: Niger

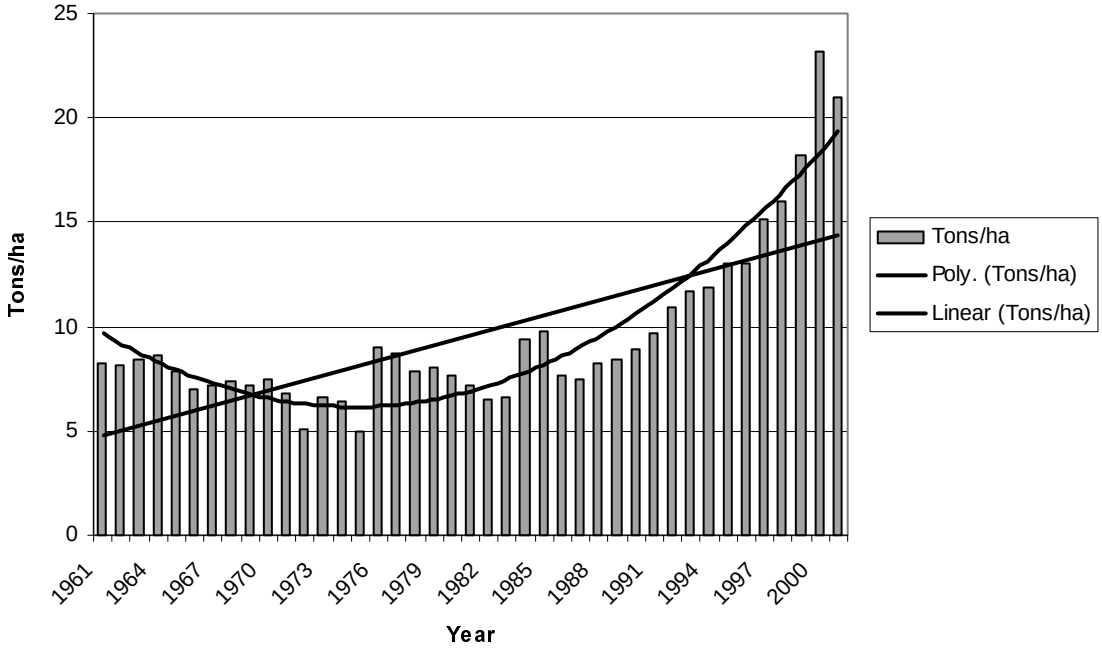

Fig. 25b Cassava yields: Mali

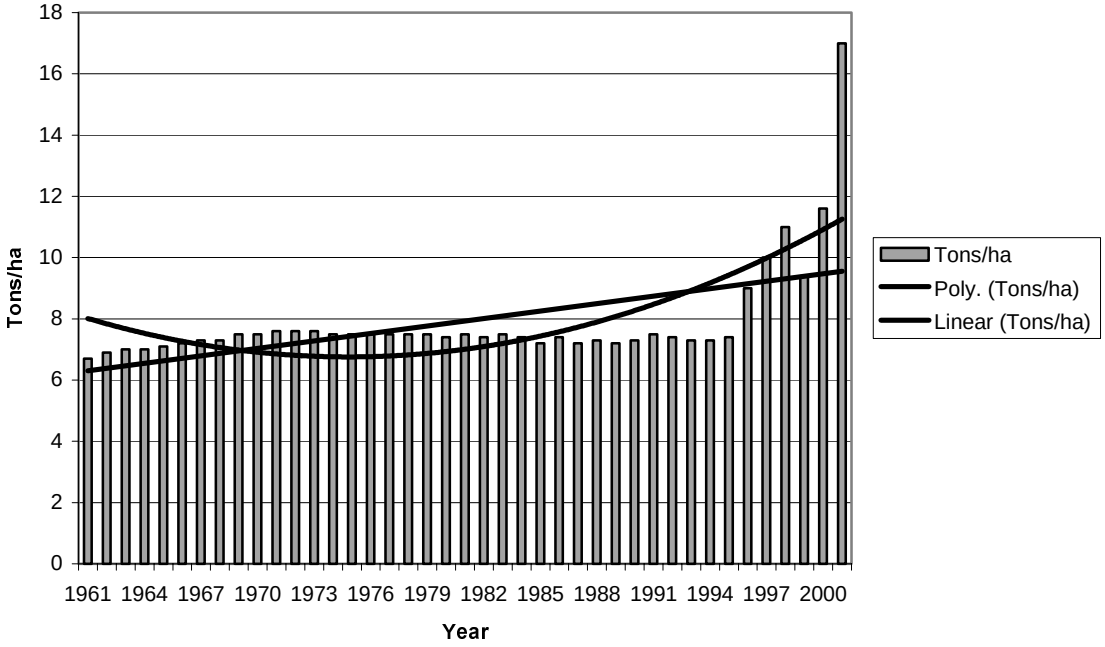

Fig. 25c Cassava yields: Nigeria

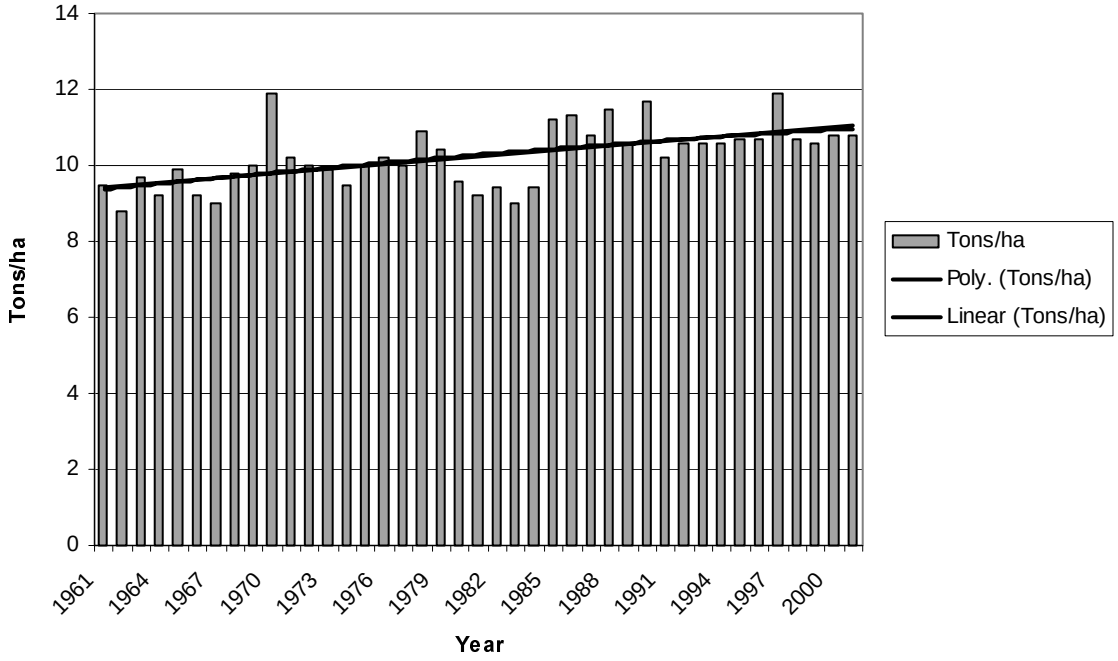

Fig. 25d Cassava yields: Senegal

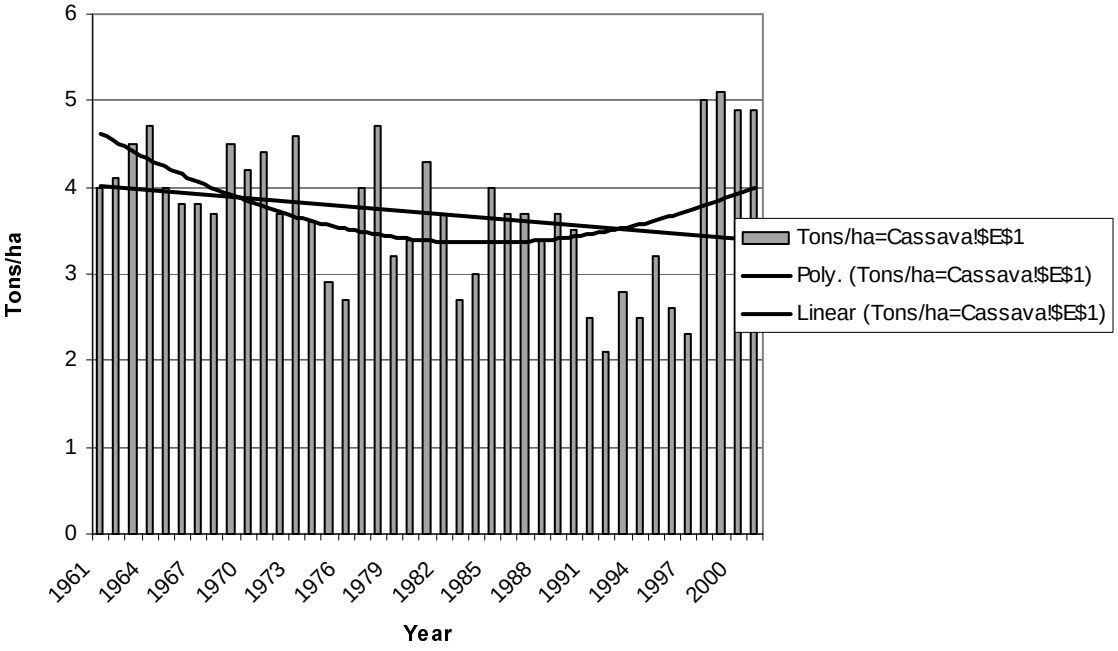

Fig. 25e Cassava yields: Ghana

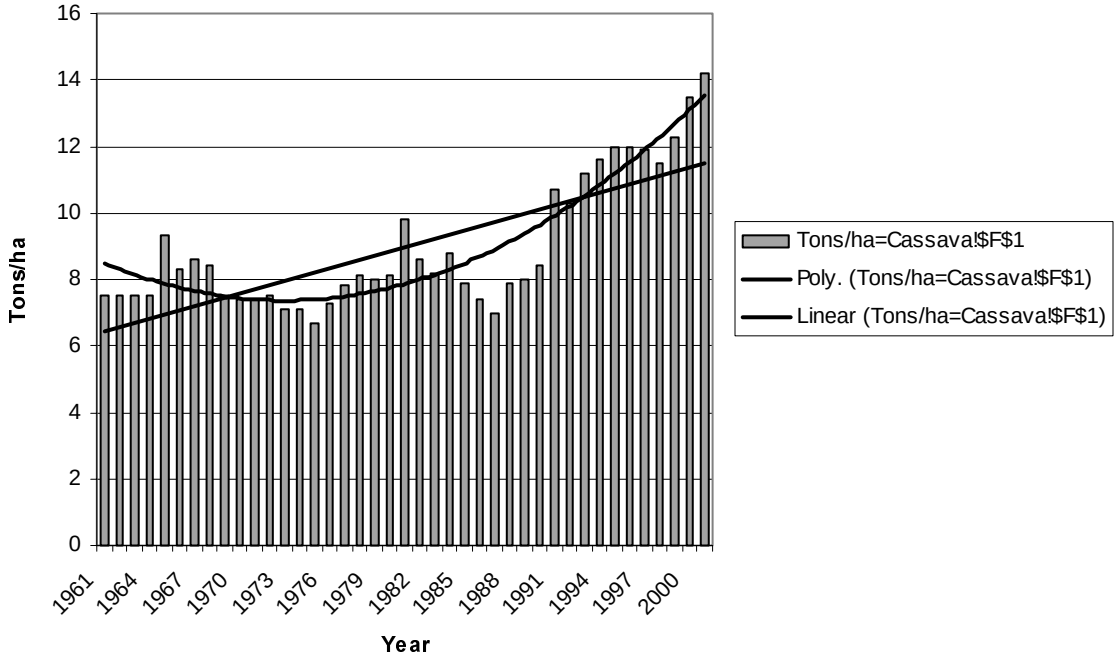

Fig. 25f Cassava yields: Côte d'Ivoire

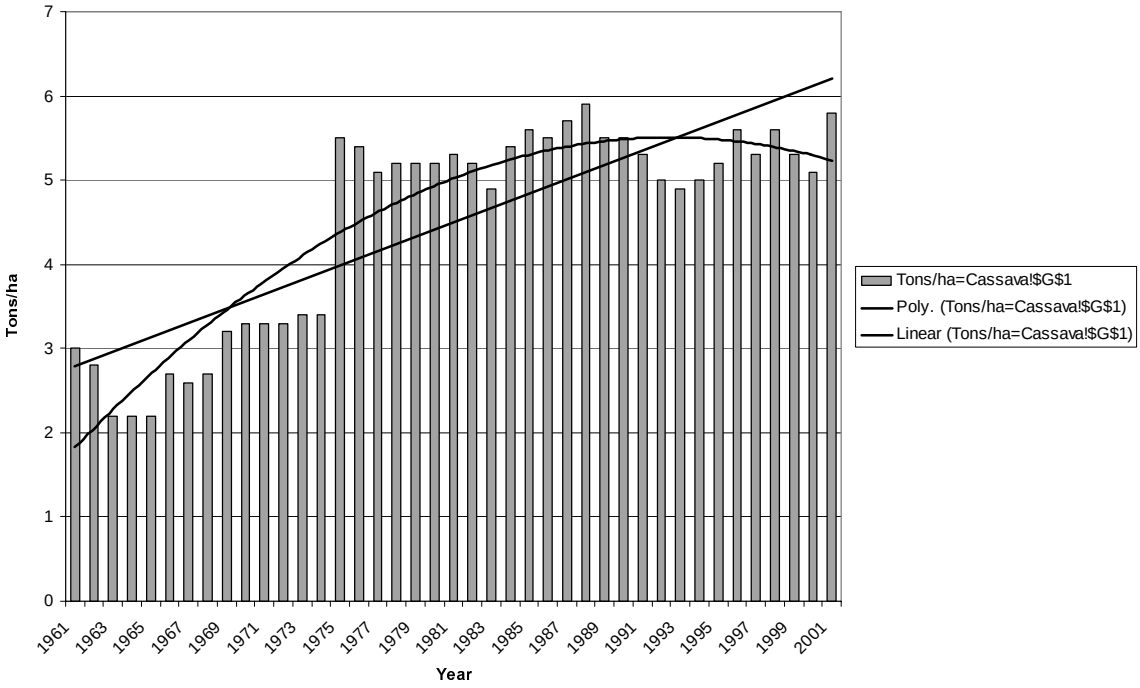

Fig. 26 Fertiliser consumption per hectare

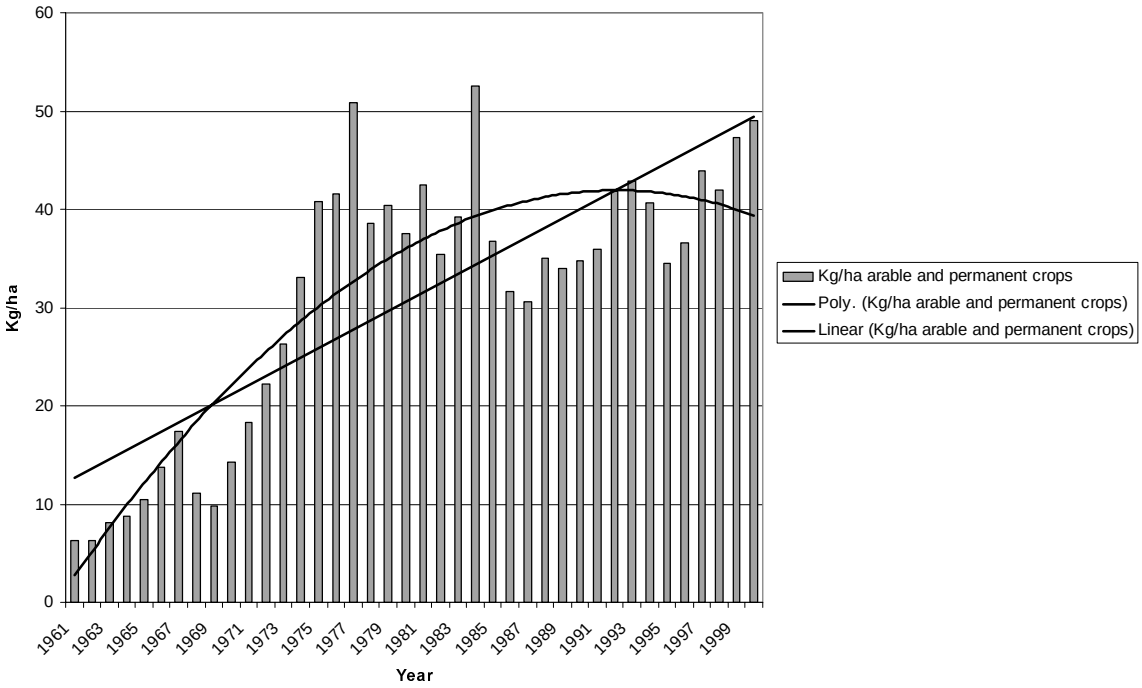

Fig. 27 Fertiliser consumption per agricultural person

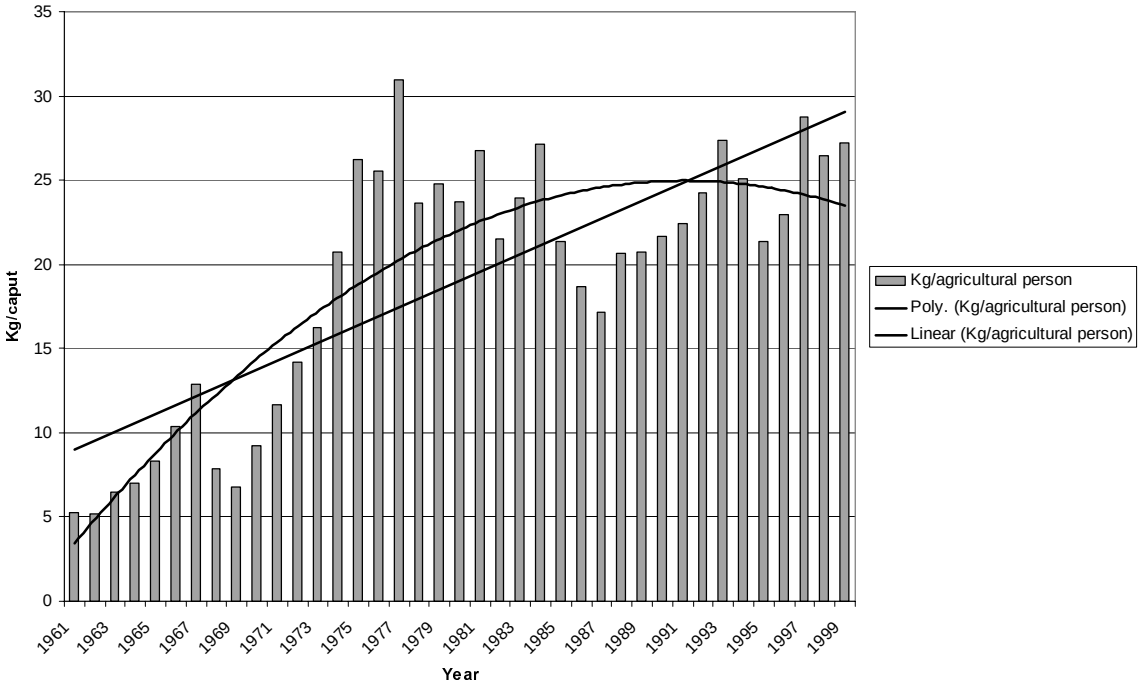

Fig. 28 Fertiliser consumption by country

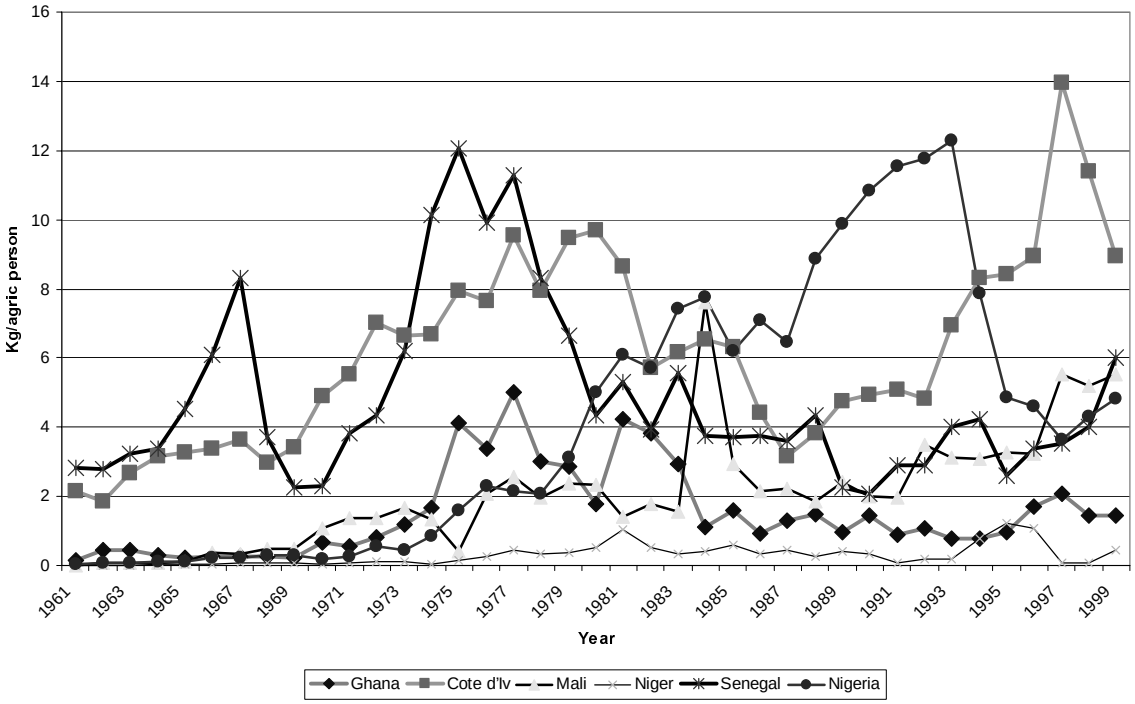

Fig. 29a Value of output per hectare: Nigeria

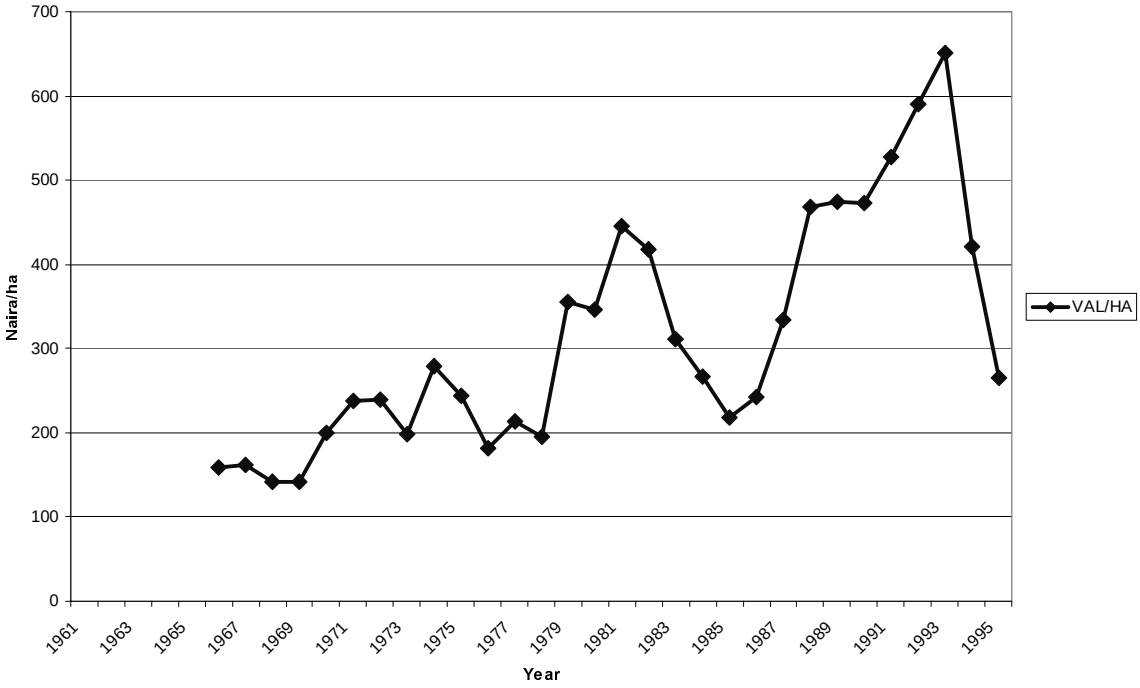

Fig. 29b Value of output per hectare: Ghana

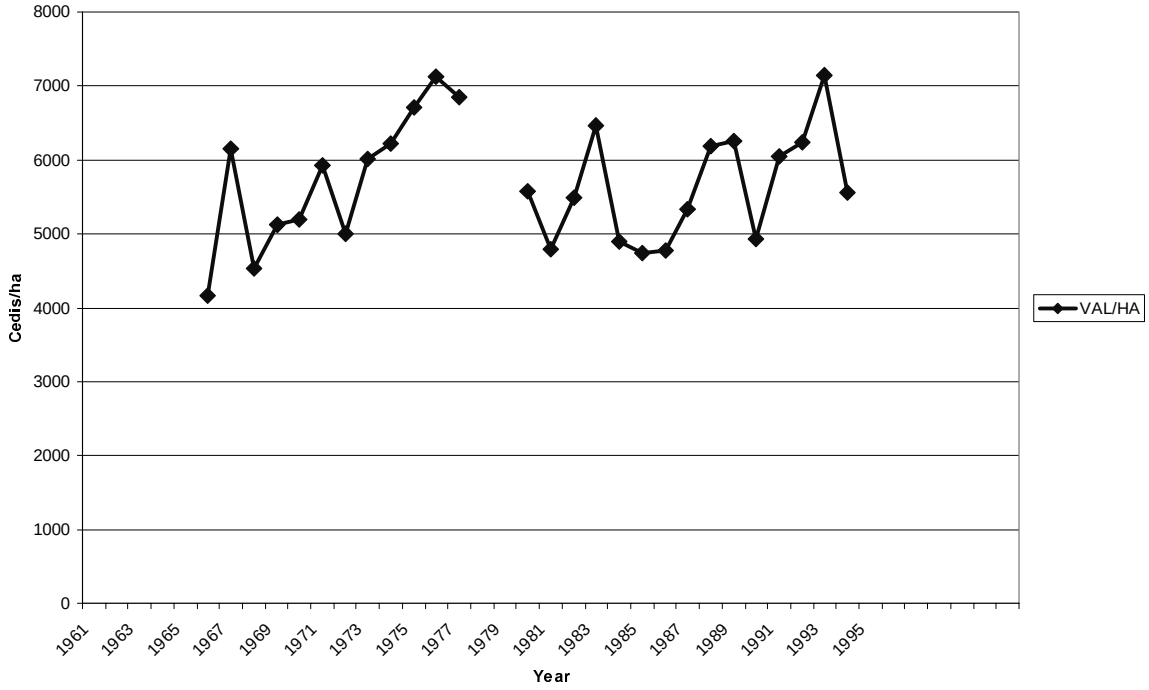

Fig. 29c Value of output per hectare: Côte d'Ivoire

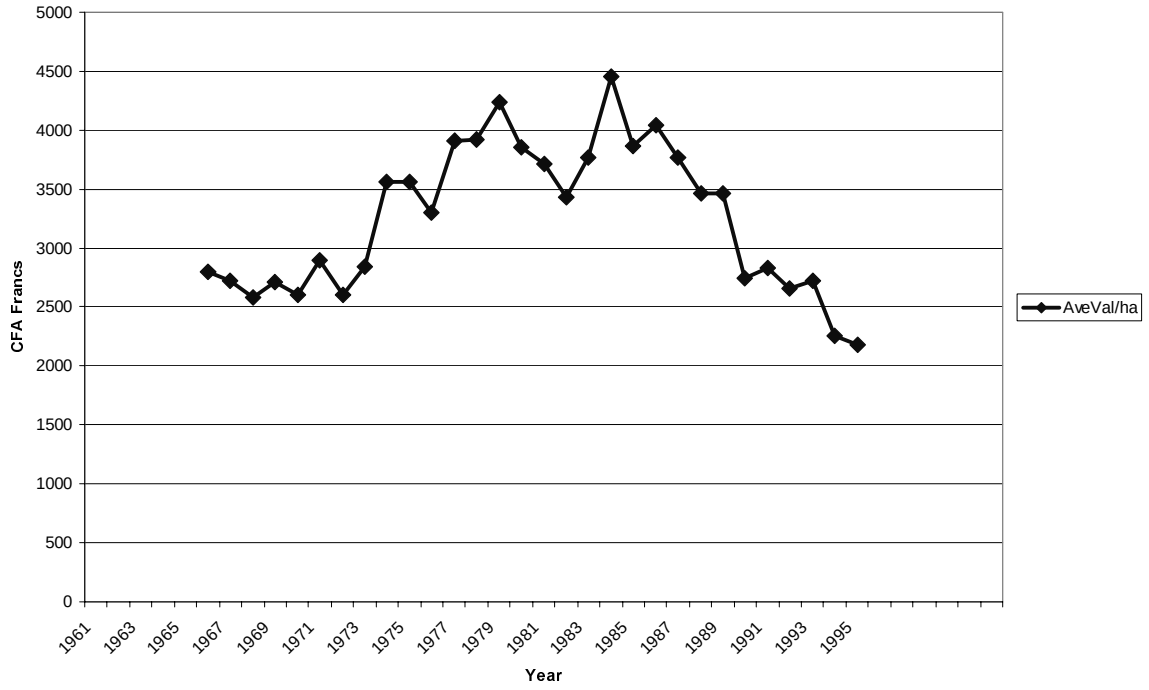

Fig. 29d Value of output per hectare: Mali

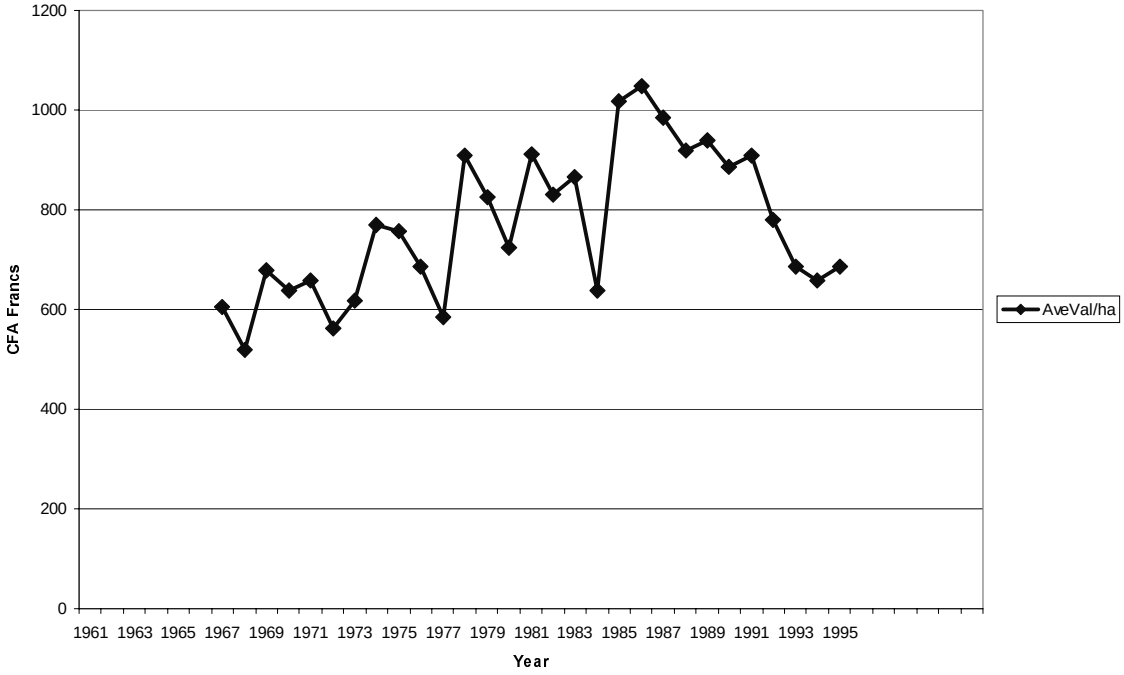

Fig. 29e Value of output per hectare: Niger

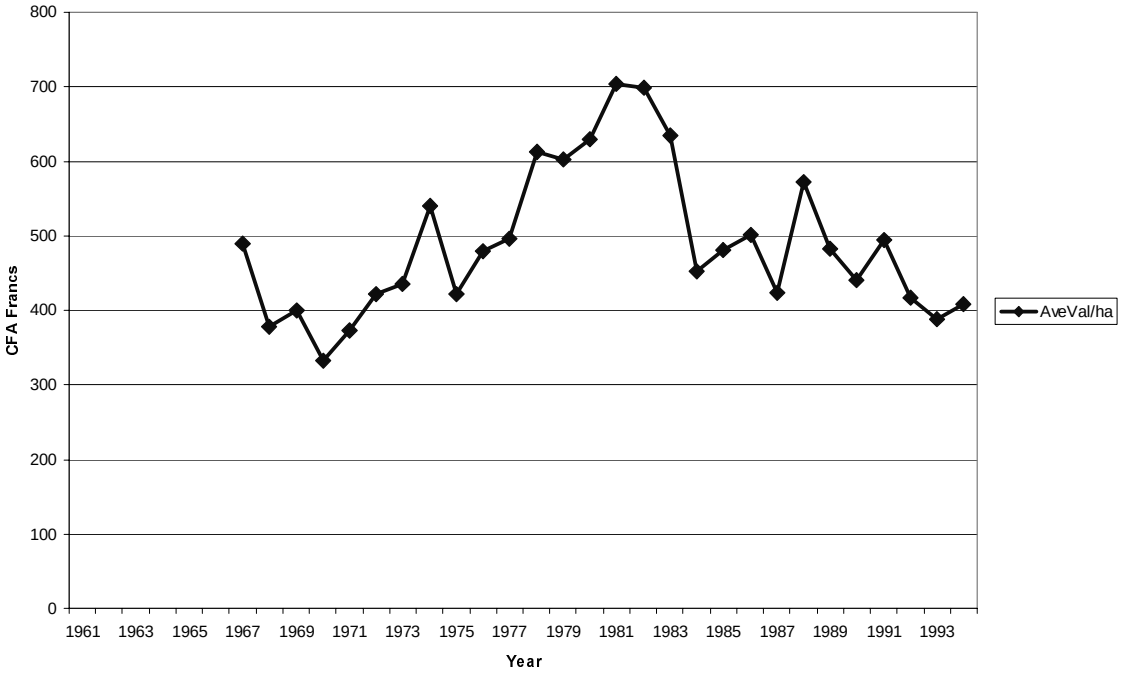

Fig. 29f Value of output per hectare: Senegal

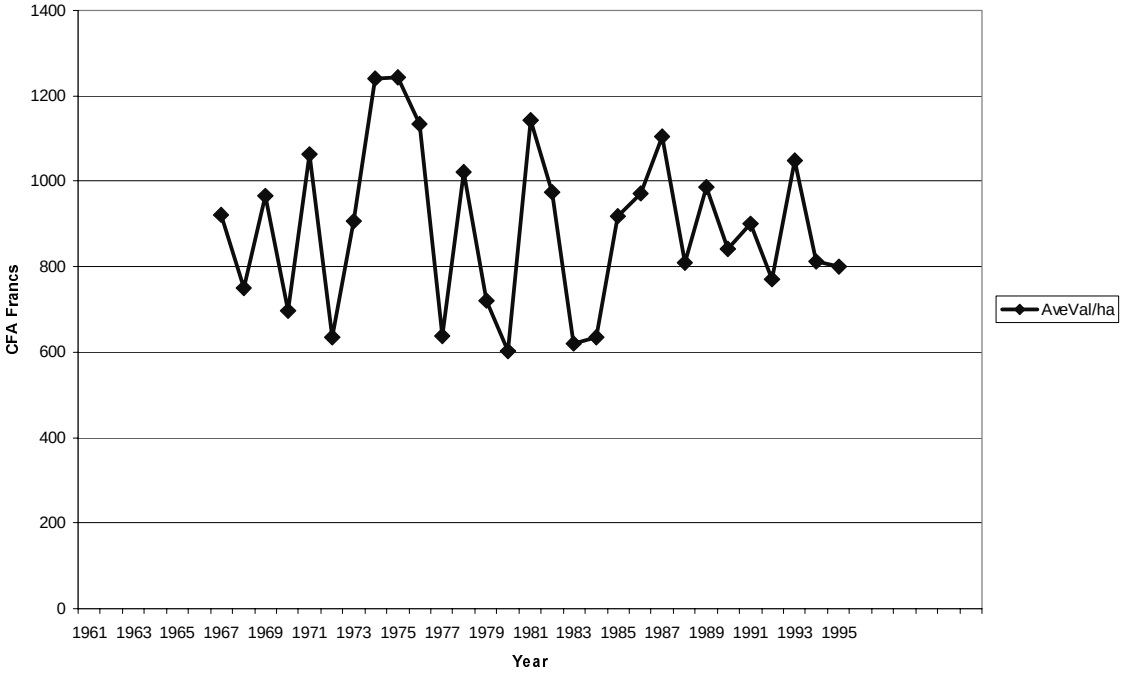

Fig. 30 Indices of livestock per caput

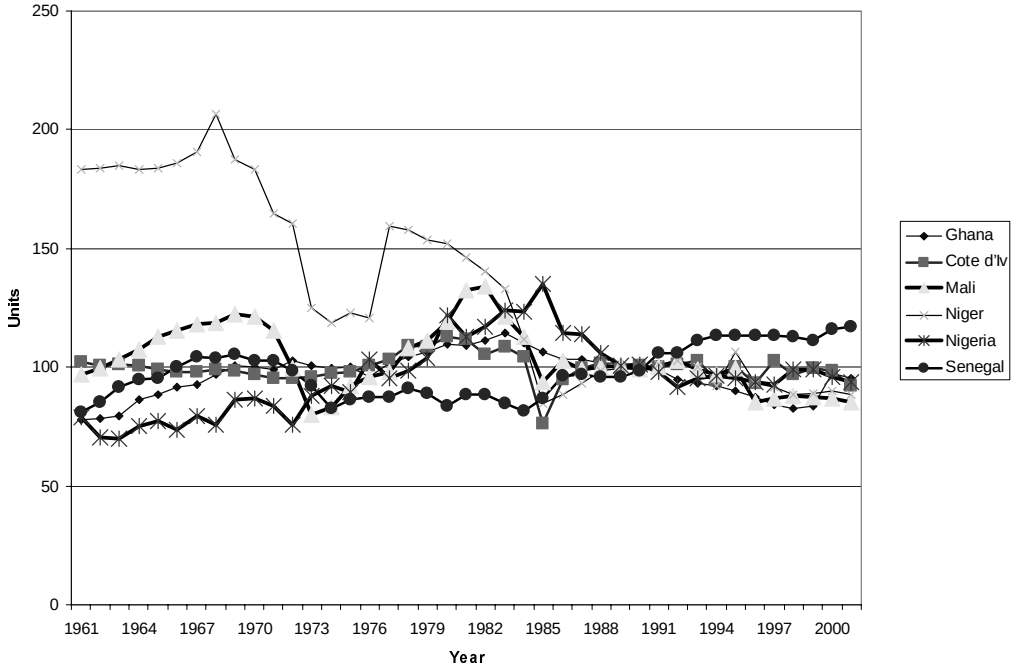

Fig. 31a Indigenous cattle meat prices (deflated)

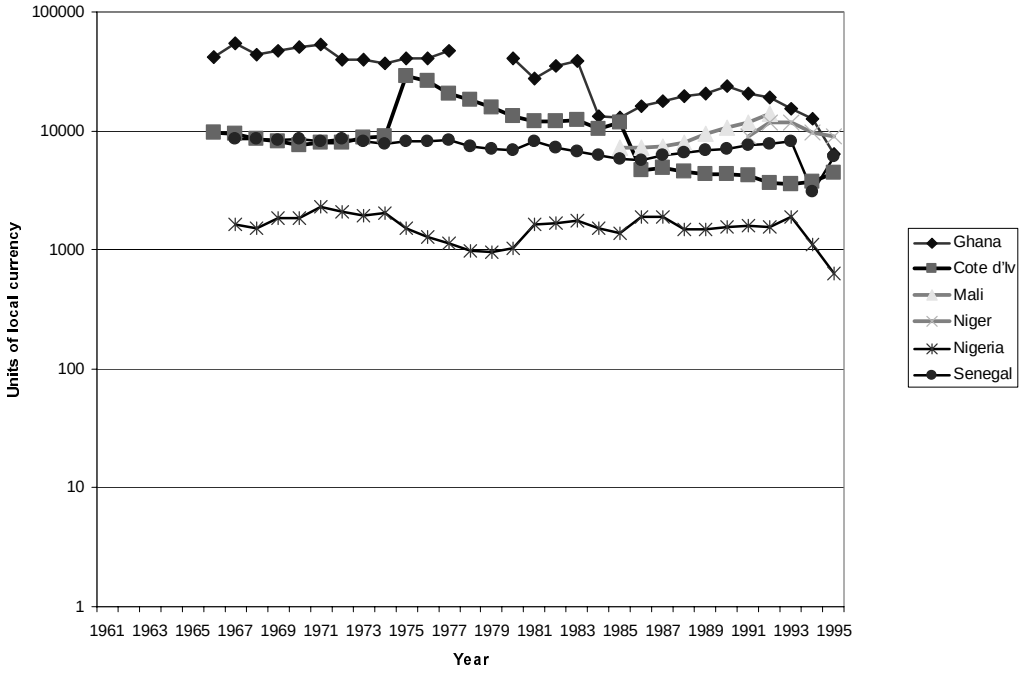

Fig. 31b Indigenous goat meat prices (deflated)

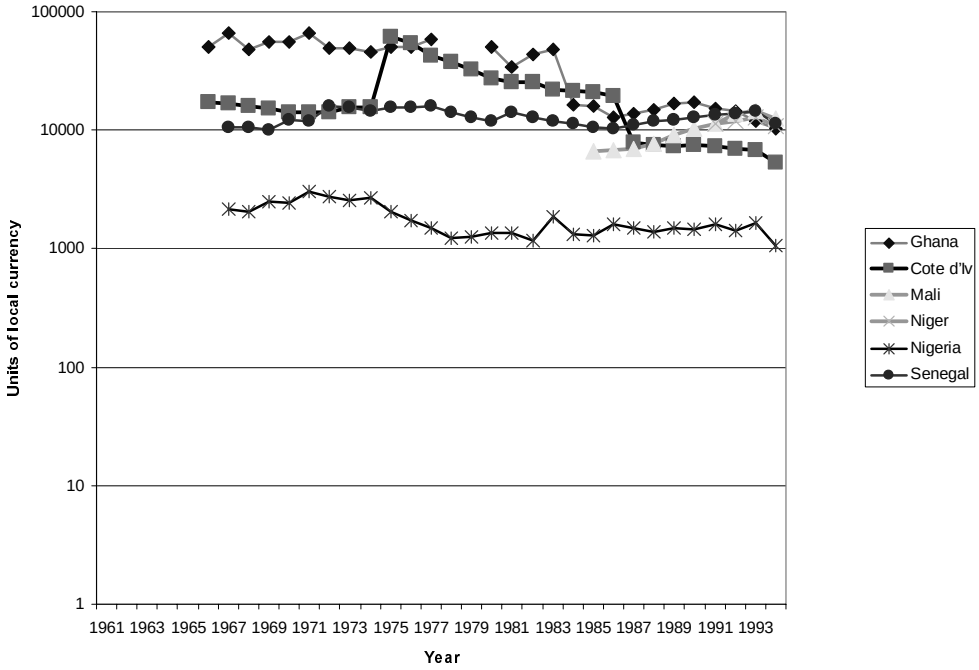

Fig. 31c Indigenous chicken meat prices (deflated)