



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Katholieke Universiteit Leuven**  
**Faculty of Agricultural and Applied Biological Sciences**



Working Paper  
2002 / 71

**MARKET INFORMATION SYSTEMS IN LIBERALIZED AFRICAN  
EXPORT COMMODITY MARKETS: THE CASE OF COCOA AND COFFEE  
IN COTE D'IVOIRE, NIGERIA AND CAMEROON**

Eric TOLLENS

November 2002

This paper (pdf) can be downloaded following the link:  
<http://www.agr.kuleuven.ac.be/aee/clo/wp/tollens2002g.pdf>

Department of Agricultural and Environmental Economics  
K.U.Leuven  
Willem de Croylaan 42, B-3001 Leuven – Belgium  
Tel. +32-16-321614, Fax +32-16-321996

Tollens, E. "Market Information Systems in Liberalized African Export Markets: The Case of Cocoa in Côte d'Ivoire, Nigeria and Cameroon" Working Paper, n° 71, Department of Agricultural and Environmental Economics, Katholieke Universiteit Leuven, 2002.

Prof. Eric Tollens,  
Katholieke Universiteit Leuven, Leuven, Belgium  
de Croylaan 42, B-3001 Leuven (Heverlee), Belgium  
Tel.: +32 16 32 16 16, Fax: +32 16 32 19 96,  
Email: [eric.tollens@agr.kuleuven.ac.be](mailto:eric.tollens@agr.kuleuven.ac.be)

*Copyright 2002 by Eric Tollens. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

**Abstract**

A performing market information system (MIS) is a key accompanying measure to market liberalization. The paper discusses the objectives and purposes of a MIS, its ideal characteristics and its concept and implementation, based on experiences with the cocoa and coffee MIS set up and presently operating in three liberalized African export commodity markets. A phased approach is suggested, with each phase being well defined and launched sequentially. The timing and location of the MIS unit, the dissemination strategy and the financing are discussed. An appropriate dissemination strategy is of vital importance to reach all intended beneficiaries.

**Keywords:** cocoa, coffee, market information system, market liberalization, West Africa

## **1. Introduction**

Most sub-Saharan African countries have liberalized their export commodity subsectors as a result of structural adjustment policies and economic liberalization. This concerns in particular cocoa and coffee, the focus of this paper, but also cotton in certain countries (Côte d'Ivoire) and other export crops. Market liberalization is the most important change in many tropical agricultural commodities over the past decade.

Historically, internal markets, particularly in many African countries were regulated by marketing board or 'caisse de stabilisation' mechanisms, with the overt purpose of reducing the variability of farm prices. In certain instances, these schemes enjoyed a measure of success, particularly where the macroeconomic environment was one of stable exchange rates, but more usually they served as taxation mechanisms. They also absorbed resources through rent extraction and retarded the response to the secular declines in prices (Knudsen and Nash, 1990) (Gilbert, 1998). Often, the intervention organizations ended up insolvent and, partly through domestic and partly through donor pressure, they have been either abolished or stripped of their powers.

Liberalization was often promoted by multilateral and national aid agencies, in particular the World Bank, the European Union (EU) and USAID, but were also in certain cases instigated solely by national governments. These programmes were motivated by a number of distinct concerns, including (Tollens and Gilbert, 2002):

- to reduce the absorption of resources by parastatal intervention agencies;
- to increase the efficiency of commodity marketing;

- to raise prices received by farmers and hence to stimulate increased levels of production;
- to promote the development of modern agribusiness industries.

These objectives have been met with varying degrees of success, but at the same time, a number of problems have emerged. Among these is the concern that market liberalization may result in less transparent marketing and loss of market power by farmers. The need for a performing market information system (MIS) then comes up.

This paper focuses on three African countries with substantial cocoa-coffee subsectors which have liberalized their markets, Nigeria already in 1986, Cameroon in 1992 for arabica coffee and in 1994 for robusta coffee and cocoa, and Côte d'Ivoire in 1998 for coffee and in 1999 for cocoa.

Nigeria only started a MIS for cocoa (CMIS-Cocoa Marketing Information System) in 2002 in the framework of the Cocoa Marketing Improvement Project<sup>1</sup>. Coffee is not important in Nigeria. Cameroon had an Arabica Marketing Information System (AMIS) operational in 1993, which was expanded to include robusta coffee and cocoa in 1994 (CRAMIS/ Cocoa, Robusta and Arabica Marketing Information System), and which was discontinued in 1996 for lack of funding. It was relaunched in 2001-2002 as SIF (Système d'Information des Filières Cacao et Café) in the framework of the Cocoa Marketing Improvement Project. Côte d'Ivoire initiated a Coffee and Cocoa

---

<sup>1</sup> A Cocoa Marketing Improvement Project is currently in operation in the three countries, financed by the International Cocoa Organization (ICCO), the Common Fund for Commodities (CFC), GTZ (Germany) and the respective countries

MIS in 1998 at the start of the coffee market liberalization, called PRIMAC (Programme d'Information sur les Marchés du Café et du Cacao), under the responsibility of the Nouvelle Caistab. And PRIMAC continued after the Nouvelle Caistab was terminated and a new market management structure -BCC (Bourse du Café et du Cacao) set up.

The market information component is an essential element of the Cocoa Marketing Improvement Project. The general objective is to achieve that markets function efficiently, what is only possible with full and equal access of all market participants to all relevant market information. The main aim of the paper is to analyze the concept and implementation of a MIS, to discuss experiences in the three countries, and to provide suggestions for the successful launching and operation of a performing MIS for export commodities.

## **2. Objectives and purposes of a market information system**

The main objective of a public Market Information System is to enhance competition in the market by increasing market transparency for all market participants, and in particular the weakest who are smallholder farmers. Thus, a MIS means **empowerment** of farmers by strengthening their bargaining power in order to increase their share of the export proceeds of their produce.

Market transparency is a condition for effective competition and good marketing performance in liberalized markets. It can be defined as the degree of information that farmers, cooperatives, traders, exporters and market control institutions, including the government, have about parameters relevant to their decision making. Adequate

knowledge of prevailing prices, quantities, qualities and conditions of sale in the markets are indispensable for rational production and marketing decisions (Shepherd, 1997).

From the farmer's point of view, market transparency allows them to adjust their production and consumption decisions, to derive the proper incentives from the market and to adjust their sales strategy in order to maximize their welfare. From a macro-economic point of view, market transparency allows vertical coordination in the marketing chain whereby price signals play their proper role in adjusting production and consumption such that maximum efficiency is attained and overall welfare is optimized. This results in maximum economic growth in the economy.

Transparency in agricultural markets results in the following effects:

- the farmers receive the proper production incentives, will adjust their production accordingly and will seize on market opportunities;
- information can improve the bargaining position of the weaker participants in a marketing system who are usually the smallholder farmers;
- competition is enhanced in markets, resulting in fair prices for all participants;
- market information signals profit opportunities and thus creates incentives for market participants;
- seasonal and erratic price variations will be reduced and arbitrage between markets will take place, thereby reducing price differentials between markets. In completely transparent and efficient markets, price differentials reflect only transaction costs (mainly transport costs) between markets;



- overall risk is reduced for all market participants, resulting in more stable markets, improved long term planning and investment decisions;
- improved government regulation of markets: better agricultural and marketing policies and public investments as the government will be adequately informed about market conditions and performance.

### **3. Characteristics of a performing market information system**

A performing MIS serves the information system needs of the market participants or target group. One of the main target groups are the smallholder farmers and their cooperatives. To this could be added small scale traders and emerging traders which have information needs very similar to those of the farmers as they also lack bargaining power vis-à-vis large scale established traders and exporters which have their own private MIS. Cooperatives and their unions also may belong to this target group. In order to render markets transparent and fulfill the information needs of the main target group, market information must be:

- relevant, i.e. its content must be related to the information needs of the target group taking into consideration the local conditions;
- meaningful, i.e. precisely specified with regard to location, time and other features and formulated in a way which can be easily understood, i.e. local language;
- reliable and impartial, i.e. accurate, without bias or pressure group (lobby) influence and regularly collected and transmitted;
- promptly available, i.e. timely for commercial transactions, and up to date. Particularly price information is considered a perishable commodity as its value erodes over time. Up-to-datedness is very important implying a weekly or bi-weekly updating;

- easily accessible, i.e. public market information is a public good which must be accessible by everybody who wants it. In this respect, the radio will be the preferred mode of dissemination as radio's are available in every village. For the same reason, T.V. and newspapers are ruled out as the main mode of diffusion although they can be used as a secondary mode;
- simple, i.e. there are a lot of advantages in a simple system. It can be more easily understood by the farmers and it will be cheaper and thus be more cost effective. Keeping it simple and cost effective will be a major consideration.

Reliability, neutrality, impartiality and simpleness are stressed in particular. The target group - farmers and their cooperatives - must have confidence and trust in the message and in the institution collecting and diffusing the information. The "public good" nature of public marketing information implies that everybody can have access to it and that everybody can be a "free rider". This is a strong argument for public involvement with this service, although this does not necessarily imply that the State needs to perform this service or pay for it. As a lot of cocoa and coffee are exported, a small tax or levy on the export can easily pay for the service.

The ultimate measure of performance is that farmers that make use of the MIS will obtain higher market prices for their produce than other farmers. Also, market prices will be more stable, markets will be better integrated with less price differences between areas and overall transaction costs in the subsectors will have decreased. The liberalized produce market will have a competitive character and all market participants will receive a fair and equitable share of the export proceeds and the local produce use value.

## **4. The concept and implementation of a performing Cocoa and Coffee Market Information System**

### 4.1. The concept of MIS

In order to facilitate the start-up and operation of the MIS, it is important to keep it simple, but also regular and reliable. A phased approach is recommended to facilitate the operation of the system. Three phases are suggested:

**Phase 1:** external market information collected daily and disseminated via the media. This concerns mainly the London CIF price for standard cocoa and robusta traded at LIFFE, and the New York "C" arabica price traded at the New York Coffee, Sugar and Cocoa Exchange. Later on, futures prices - 3 months and 6 months ahead - can be added.

The LIFFE market at London is indicated for cocoa and robusta as this is the main market for these products; New York is indicated for arabica as that is the major market for that product. The daily price should be converted to local currency using the official exchange rate, and the used exchanged rate should always be indicated.

From the daily price (CIF), the main port of export FOB price can be derived easily by deducting the CIF costs which comprise:

- sea freight costs export port - northern Europe (or New York)
- maritime insurance
- financing costs
- product losses during sea transport

The export port FOB price has the advantage of being closer to farmers than the London or New York price. To start Phase 1, only the CIF daily price in local currency can be taken - later on, the local export port FOB price can be added, and at an even later stage, the futures prices and a break down of market prices into related prices receivable at lower levels of the marketing chain. Such a breakdown reflects the link between world market prices and local price formation. Particularly truly fixed costs in the marketing chain, such as taxes and levies, can be deducted from the export price in order to come closer to the farmer paid price.

As there is usually a differential for each origin, a correction for "origin" needs to be applied for the FOB export port price. The differential relates to quality and other characteristics of the origin as against the term, in particular good business practices and abiding by contractual obligations. Quality of coffee is more easy to determine (assess defective coffee beans) than cocoa where a proper cut test is necessary. It is however not easy to determine the origin differential, as the trade representatives need to be consulted on this.

**Phase 2<sup>2</sup>:** internal market information, in particular the prices received (farm gate) by cocoa and coffee farmers for each particular grade. Such prices need to be collected weekly, in the most important producing areas. In each area, ideally two or three collaborating institutions such as cooperatives or farmer's organizations, or their representatives, NGO's or other institutions should collect weekly prices paid to farmers and transmit that information to the central MIS office. The prices collected should be in the form of a minimum-maximum range, with the range not being too broad, and the average price. It is important that the prices collected are representative of the prices paid (to farmers) prevailing at that week in the area. Prices need to be per kg weight, not per bag of unspecified weight converted to a standard weight per bag. In this respect, it may be necessary to distribute some weighing scales to the collaborating institutions.

The price range (minimum-maximum) is important because prices vary in an area, even for the same grade. In addition, the range of prices conveys the message that prices are negotiable and variable, and follow international market swings. The points of transmission of prices need to be equipped with a fax machine or the Internet, the budget allowing. It is important to keep in mind that the communication equipment

---

<sup>2</sup> In Cameroon, in 1993-1994, a Phase 2 AMIS was launched with the aim to disseminate producer prices being offered by arabica coffee buyers. The cooperatives duly submitted their offering prices, which differed from cooperative to cooperative, but the private sector buyers got together and decided, in perfect collusion, to give one equal offering price for all. In practice, they all paid different prices but the collusion in announcing only one offering price went against the principles of economic liberalization. It was therefore decided not to repeat this experience and this type of Phase 2 was thus scrapped and replaced by an observation of buying prices actually paid to growers.

(fax, PC-Internet) will work two-ways, i.e. to send market information to the central office, and to receive MIS bulletins. Thus, they will also serve as privileged dissemination points (see further: dissemination strategy).

**Phase 3:** MIS moves towards a fully web-based strategy and adds to its website other information besides price information. A web-based strategy implies that most of the data collected in the field is transmitted to the central MIS office via the web, and that most of the dissemination of information also occurs via the web. The strategy thus also depends on the development of the Internet in the country. In Côte d'Ivoire, a web based strategy has been adopted and is now being gradually implemented.

#### 4.2. Timing

A phased approach is indicated in order to plan well ahead and to have an orderly implementation. Each new phase should start at the beginning of the main produce marketing season. Phase 3 can only start when the Internet is fully operational and when sufficient budget is available to pay for all hardware and software requirements.

#### 4.3. Location of the central MIS unit

At the start of a MIS project, the government or the national parastatal body in charge of cocoa and coffee usually houses the unit. This may inspire confidence in the system and will facilitate the setting-up and launching. But once fully operational and performing, there may be benefit in spinning it off to a trade association or private entity, with a Ministry or parastatal body still in a supervisory role.

In Cameroon, the National Cocoa and Coffee Board (NCCB) operated AMIS and SIMARC-CRAMIS. Presently, SIF is run from the Cocoa Marketing Improvement Project with the collaboration of the NCCB. It is intended that SIF becomes an independent, autonomous body when the Cocoa Marketing Improvement Project ends. In Côte d'Ivoire, PRIMAC was set up by the Nouvelle Caistab, a parastatal organization, and is now run by BCC, in principle a private entity where all participants in the cocoa-coffee trade are represented, under the supervision of ARCC (Autorité de Régulation du Café et du Cacao), the governmental regulatory body for cocoa-coffee. In Nigeria, the Federal Ministry of Commerce at Abuja - Commodity Department - initiated and runs the CMIS (Cocoa Market Information System), in good collaboration with the Cocoa Association of Nigeria at Akure which will maybe take responsibility for it at a later stage.

#### 4.4. Dissemination strategy

##### *4.4.1. Means of dissemination*

Adequate collection and processing of market information, in particular prices, is of no use if the intended clients/beneficiaries or target group has no access to the information. The success or failure of a MIS hinges on a successful dissemination strategy. As a large number of clients need to be reached, on a regular basis, the mass media need to be relied on. The press should not be relied on as the main vehicle of dissemination. Many farmers do not read newspapers, or if they do, it is irregularly. Still, the press may be important to reach buyers, cooperatives, middlemen, etc..

Experience has shown that the rural or local radio, in local language, is the most effective means of reaching farmers as almost all of them listen to the radio on a daily

basis. This was notably the case in Cameroon with AMIS and SIMARC-CRAMIS which was diffused by the radio in six local languages in the West province and 26 in the North-West province in addition to pidgin. In the case of Nigeria, this means relying on State radio (more than national radio) and emerging local private radios. In Cameroon and Côte d'Ivoire, the provincial radios are most important. Finally, television coverage (one minute broadcast) on a regular basis, once weekly, may also be a cost-effective instrument to reach large numbers of interested persons.

A budget has to be foreseen for dissemination. Almost all of the media require payment for regular diffusion of messages of commercial interest, even if they are in the national interest. Also, experience has shown that regular service against payment is best, because then only can regular performance be assured.

#### *4.4.2. Types of dissemination bulletins and frequency*

Two types of bulletins need to be prepared:

- a daily (working day) bulletin with Phase 1 information: the London or New York CIF daily price, in local currency, to be complemented (later) by a derived FOB daily export port price. The used official exchange rate must be listed. This bulletin is small, not necessarily larger than a business card. This bulletin only contains Phase 1 information.
- a weekly bulletin, for distribution once every week on a fixed day, e.g. every Friday. It will contain Phase 1 + Phase 2 information, i.e. in addition to the information of the daily bulletin, the once weekly prices paid (range) to the farmers in the main producing areas. This bulletin will be about 1/3 to half a page A4.



The daily and weekly bulletins should ideally be included in the listed newspapers and be read on provincial or State radio. The weekly bulletin could be included on national TV, once a week, after the main news, as a rolling news bulletin - one minute duration but this will cost money and may not be feasible. The weekly bulletin should also be sent out by fax or email to the collaborating organizations and to anybody who requests it. In addition, it is suggested that the daily and weekly bulletins are read on an automatic reply telephone number. Dissemination as SMS messages through mobile cellular telephone is also possible and cost-effective. This is now envisaged in the three countries.

#### 4.5. Financing of the MIS

Financing of the dissemination strategy should be viewed in the context of the sustainability of the MIS. Sustainable financing will be problematic as long as income is not assured in an automatic, regular way. A small levy at export for MIS appears to be the most attractive proposition. In Cameroon, it was estimated that the MIS will require annually about \$ 120.000. This includes everything, office rent, salaries of all personnel, dissemination, etc.. In addition, a start-up once-only budget was required for equipment of \$ 130.000. It is not known how much the MIS costs in Côte d'Ivoire and Nigeria. In Côte d'Ivoire, BCC operates the system on its own resources based on a levy at export. In Nigeria, the Federal Ministry of Commerce pays the operation from its federal budget while in Cameroon, financing is a recurring problem and the major constraint. Minimal reliance on recurrent government budgets or on donor financing is best to ensure sustainable financing of the system.

## **5. Conclusions**

It is important to start a MIS, using the phased approach outlined. Once the MIS operational, improvements can be made in the concept and in the implementation. Also, the scope of the MIS can be gradually extended. The main constraint will be the dissemination strategy, for which a budget must be planned. The dissemination hinges on the collaboration of the media (press, radio, TV), for which a budget must be made available. In the end, sustainable financing must be secured for continuous operation and enduring performance of a MIS.

Close contact and collaboration with the trade association will be important in order to secure harmonious development of the MIS. Undoubtedly, some members will be against, as their interests are not served by more price transparency in commodity markets. It is even expected that attempts will be made to shut down the system, and one of the most effective ways of doing that is by starving it of funds. Also, the concept itself will be attacked as price information, whatever the definition of prices used, will never be perfect and will always lend itself to contest and criticism.

In the end, one must recognise that a MIS is an accompanying measure to economic liberalisation, in order to create more (price) transparency and to foster price competition. Particularly small cocoa and coffee producers who are in an unfavourable bargaining position with buyers may benefit the most from it. Empowerment of their bargaining position in a liberalised market is one of the major aims. If a MIS succeeds, thousands of small cocoa and coffee producers will receive (marginally) higher prices, not a spectacular result, but important by aggregation in terms of poverty alleviation, income and welfare of smallholder families.

Market information is a perishable commodity. But information is also power, and information asymmetry in primary commodity markets dominated by smallholders, as is the case in the three countries, is usually quite important, to the detriment of producers. Timely, accurate and representative market information is a powerful tool in the empowerment of farmers in a liberalized marketing system.

It is hoped that cooperatives will become the major ally of the MIS. Their role over the years has become more and more that of local collection and bulking, and bargaining on behalf of their members with major buyers and exporters. The cooperatives in the process of liberalization have suffered a lot, victims of their unfavourable marketing cost structure. In Cameroon and Nigeria, none of the cooperatives still export directly to overseas buyers. In Côte d'Ivoire, attempts are now being made to strengthen the cooperatives and to increase the small amounts they export directly.

## References

- Akiyama, T. (2001), "Coffee market liberalization since 1990", in Akiyama, A., J. Baffes, D. Larson and P. Varangis eds., *Commodity Market Reforms: Lessons of Two Decades*, Washington, D.C., World Bank, 83-120.
- Gilbert, C.L. (1998), *Cocoa Market Liberalization: Its Effects on Quality, Futures Trading and Prices*, London, Cocoa Association of London.
- Gilbert, C.L., and E.F. Tollens (assisted by S-P. Essomba\_Abanada, H. Fankman, F. Kamajou and A. Nchare) (1999) "Effets de la libéralisation dans les sous-secteurs café-cacao au Cameroun", Volume 1, report for the European Commission, Vrije Universiteit, Amsterdam.
- Knudsen, O., and J. Nash (1990), "Domestic price stabilization schemes in developing countries", *Economic Development and Cultural Change*, 38, 539-58.
- Shepherd, Andrew W. (1997), *Market Information Services - Theory and practice*, FAO Agricultural Services Bulletin: 125, Rome, 58 p.
- Shepherd, A.W., and S. Farolfi (1999), "Export crop liberalization in Africa: a review", FAO Agricultural Services Bulletin, 135, Rome, FAO.
- Tollens, E., and C. Gilbert (2002), *Does liberalization jeopardize export quality? Cameroonian Cocoa, 1998-2000*, submitted to the *Journal of African Economics*.
- Varangis, P., and G. Schreiber (2001), "Cocoa market reforms in west Africa" in Akiyama, A., J Baffes, D. Larson and P. Varangis eds., *Commodity Market Reforms: Lessons of Two Decades*, Washington, D.C., World Bank, 35-82.

### List of Available Working Papers

- nr. 1 BEERLANDT, H. en L. DRIESEN, *Criteria ter evaluatie van 'duurzame landbouw'*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 35 p.
- nr. 2 BEERLANDT, H. en L. DRIESEN, *Evaluatie van herbicide-resistente planten aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 39 p.
- nr. 3 BEERLANDT, H. en L. DRIESEN, *Evaluatie van bovine somatotropine aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 63 p.
- nr. 4 BEERLANDT, H. en L. DRIESEN, *Evaluatie van gemanipuleerde planten met biopesticide eigenschappen afkomstig van Bacillus thuringiensis aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 32 p.
- nr. 5 BEERLANDT, H. en L. DRIESEN, *Evaluatie van haploïde planten aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 17 p.
- nr. 6 BEERLANDT, H. en L. DRIESEN, *Evaluatie van genetische technieken voor diagnosebepaling, immunologische technieken ter verbetering van de landbouwproductie en transgene dieren en planten als bioreactor aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 28 p.
- nr. 7 BEERLANDT, H. en L. DRIESEN, *Evaluatie van verbetering van de stikstoffixatie bij planten aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 17 p.
- nr. 8 BEERLANDT, H. en L. DRIESEN, *Evaluatie van porcine somatotropine aan criteria voor duurzamelandbouw*, Afdeling Landbouweconomie, K.U.Leuven, januari 1994, 29 p.
- nr. 9 BEERLANDT, H. en L. DRIESEN, *Evaluatie van tomaten met een langere houdbaarheid aan criteria voor duurzame landbouw*, Afdeling Landbouweconomie, K.U.Leuven, februari 1994, 30 p.
- nr. 10 CHRISTIAENSEN, L., *Voedselzekerheid: van concept tot actie: een status questionis*, Afdeling Landbouweconomie, K.U.Leuven, april 1994, 106 p.
- nr. 11 CHRISTIAENSEN, L. and J. SWINNEN, *Economic, Institutional and Political Determinants of Agricultural Production Structures in Western Europe*, Afdeling Landbouweconomie, K.U.Leuven, May 1994, 40 p.

- nr. 12 GOOSSENS, F., *Efficiency and Performance of an Informal Food Marketing System, The case of Kinshasa, Zaire*, Afdeling Landbouweconomie, K.U.Leuven, July 1995, 41 p.
- nr. 13 GOOSSENS, F., *Failing Innovation in the Zairian Cassava Production System, A comparative historical analysis*, Afdeling Landbouweconomie, K.U.Leuven, July 1995, 18 p.
- nr. 14 TOLLENS, E., *Cadre conceptuel concernant l'analyse de la performance économique des marchés*, Projet-FAO "Approvisionnement et Distribution Alimentaires des Villes de l'Afrique Francophone", Afdeling Landbouweconomie, K.U.Leuven, août 1995, 35 p.  
(Deuxieme version, avril 1996)
- nr. 15 TOLLENS, E., *Les marchés de gros dans les grandes villes Africaines, diagnostic, avantages et éléments d'étude et de développement*, Projet-FAO "Approvisionnement et Distribution Alimentaires des Villes de l'Afrique Francophone", Afdeling Landbouweconomie, K.U.Leuven, août 1995, 23 p.  
(Deuxieme version, septembre 1996, 32 p.)
- nr. 16 ENGELLEN, G., *Inleiding tot de landbouwvoorlichting* (heruitgave), Afdeling Landbouweconomie, K.U.Leuven, augustus 1995, 17 p.
- nr. 17 TOLLENS, E., *Agricultural Research and Development towards Sustainable Production Systems: I. Information Sources, Surveys; II. Conceptualisation of the Change Process*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 1, Afdeling Landbouweconomie, K.U.Leuven, August 1995
- nr. 18 TOLLENS, E., *Planning and Appraising Agricultural Development programmes and Projects: I. Farm Planning; II. Aggregation, Sensitivity Analyses and Farm Investment Analysis; III. Guidelines on Informal Surveys and Data Collection*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 2, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 19 TOLLENS, E., *Structural Adjustment and Agricultural Policies: I. Market Theory: the State and the Private Sector; II. Output Markets and Marketing Institutions; III. Input Markets; IV. Case Study: Cameroon*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 1, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 20 TOLLENS, E., *Theory and Macro-Economic Measures of Structural Adjustment – Methods of Evaluation and Linkages to the Agricultural Sector: I. Development Models and the Role of Agriculture*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 2, Afdeling Landbouweconomie, K.U.Leuven, September 1995

- nr. 21 TOLLENS, E., *Theory and Macro-Economic Measures of Structural Adjustment – Methods of Evaluation and Linkages to the Agricultural Sector: II. Implementation of Policy Reforms: Case Study of Market Liberalisation in Cameroon for Cocoa and Coffee*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 2, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 22 TOLLENS, E., *Supply Response within the Farming Systems Context: I. Input Supply and Product Markets; II. Agricultural Supply Response Assessment*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 3, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 23 GOOSSENS, F., *Agricultural Marketing and Marketing Analysis: I. Agricultural Marketing Research Frameworks. II. Agricultural Market Performance Criteria and The Role of Government Intervention*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 3, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 24 GOOSSENS, F., *Agricultural Marketing and Marketing Analysis: Demand Analysis*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 3, Afdeling Landbouweconomie, K.U.Leuven, September 1995
- nr. 25 CHRISTIAENSEN, L. en H. BEERLANDT, *Belgische voedselhulp geanalyseerd met betrekking tot voedselzekerheid*, Afdeling Landbouweconomie, K.U.Leuven, november 1994, 15 p.
- nr. 26 CHRISTIAENSEN, L. en H. BEERLANDT, *De Belgische ontwikkelingssamenwerking met Rwanda geanalyseerd met betrekking tot voedselzekerheid*, Afdeling Landbouweconomie, KU.Leuven, november 1995, 36 p.
- nr. 27 BEERLANDT, H., *Identificatie van de meest kwetsbaren in Monduli distrikt, Arusha regio, Tanzania, A.C.T.-* Afdeling Landbouweconomie, K.U.Leuven, april 1995, 40 p.
- nr. 28 BEERLANDT, H., TOLLENS, E. and DERCON, S., *Methodology for Addressing Food Security in Development Projects, Identification of the Food Insecure and the Causes of Food Insecurity based on Experiences from the Region of Kigoma, Tanzania*, Department of Agncultural Economics and Centre for Economic Research, K.U.Leuven, Leuven, December 1995, 19 p.
- nr. 29 BEERLANDT, H., *Koppelen van noodhulp en structurele ontwikkelingssamenwerking: opties voor een Belgisch beleid*, Afdeling Landbouweconomie, K.U.Leuven, december 1995, 23 p.

- nr.30 TOLLENS, E., *La crise agraire au Zaïre: pour quelle politique de développement dans la phase de transition?*, Une contribution au colloque "Le Zaïre en Chantier: Quels Projets de Societé", Anvers, 18 février 1993, December 1995, 14 p.
- nr.31 GOOSSENS, F., *Rôle des systemes d'alimentation dans la securité alimentaire de Kinshasa*, Une contribution au projet GCP/RAF/309, AGSM, FAO, mai 1996, 78 p.
- nr.32 BEERLANDT, H., DERCON, S., and SERNEELS, I., (Project co-ordinator: E. TOLLENS), *Tanzania, a Food Insecure Country?*, Department of Agricultural Economics, Center for Economic Research, K.U.Leuven, September 1996, 68 p.
- nr. 33 TOLLENS, E., *Food security and nutrition 2. Case study from Tanzania*, Nectar Programme, Agricultural Economics and Policy Reforms, module 4, Afdeling Landbouweconomie, K.U.Leuven, Septembre 1996, 47 p.
- nr. 34 BEERLANDT, H., en SERNEELS, J., *Voedselzekerheid in de regio Kigoma, Tanzania*, Afdeling Landbouweconomie en Centrum voor Economische Studiën, K.U.Leuven, september 1996, 45 p.
- nr. 35 BEERLANDT, H., *Identificatie van verifieerbare indicatoren ter toetsing van de voedselzekerheidssituatie in de regio Arusha, Tanzania*, Afdeling Landbouweconomie, K.U.Leuven, november 1996, 60 p.
- nr. 36 GOOSSENS, F., *Commercialisation des vivres locaux en Afrique Subsaharienne, le secteur informel dans un perspectif dynamique*, Une contribution au projet GCP/RAF/309, AGSM, FAO, novembre 1996, 58 p.
- nr. 37 GOOSSENS, F., *The Economics of Livestock Systems: I. Marketing Problems and Channels of Livestock in Subshara Africa*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 4, Afdeling Landbouweconomie, K.U.Leuven, November 1996.
- nr. 38 GOOSSENS, F., *The Economics of Livestock Systems: II. Price Stabilization in the Livestock Sector*, NATURA-NECTAR course: "Agricultural Economics and Rural Development", module 4, Afdeling Landbouweconomie, K.U.Leuven, November 1996.
- nr.39 GOOSSENS, F., *The Economics of Livestock Systems: III. Consumer Demand for Livestock Products*, NATURA-NECTAR course: "Agricultural Economics and Rural Development, module 4, Afdeling Landbouweconomie, K.U.Leuven, November 1996.
- nr. 40 JASPERS, N., *I. La Seguridad Alimenticia en el departamento de Quiché: Identificación e Impacto del Programa de Créditos, II. Informe Sobre Estudio Seguridad Alimenticia*, ACT - Afdeling Landbwaueconomie, K.U.Leuven, November 1996, 39 p.



- nr. 41 TOLLENS, E., *Social indicators with an illustration from Thailand*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 4, Afdeling Landbouweconomie, K.U.Leuven, January 1997, 38 p.
- nr. 42 BEERLANDT, H., en SERNEELS, J., *Handleiding voor een voedselzekerheidsdiagnose*, Afdeling Landbouweconomie en Centrum voor Economische Studiën, K.U.Leuven, februari 1997, 131 p.
- nr. 43 BEERLANDT, H., and SERNEELS, J., *Manual for a Food Security Diagnosis*, Department of Agricultural Economics and Center for Economic Research, K.U.Leuven, March 1997, 125 p.
- nr. 44 GOOSSENS, F., *Aangepaste vormen van samenwerking als hefboom voor de sociaal-economische promotie van boeren in het zuiden - algemene conclusies*, Seminarie georganiseerd door Ieder Voor Allen, Brussel, 17-18 maart 1997, 8 p.
- nr. 45 GOOSSENS, F., *Commercialisation des vivres locaux en Afrique Subsaharienne - neuf études de cas*, Afdeling Landbouweconomie, K.U.Leuven, Mai 1997, 50 p.
- nr. 46 BEERLANDT, H., en SERNEELS, J., *Food Security in the Kigoma Region of Tanzania*, Department of Agricultural Economics and Center for Economic Research, K.U.Leuven, May 1997, 42 p.
- nr. 47 BEERLANDT, H., and SERNEELS, J., *Manuel Pour un Diagnostic de Sécurité Alimentaire*, Département d'Economie Agricole et le Centre d'Etudes Economiques, K.U.Leuven, Juillet 1997, 134 p.
- nr. 48 GOOSSENS, F., *Rural Services and Infrastructure - Marketing Institutions*, NATURA-NECTAR course: "Agricultural Economics and Policy Reforms", module 4, Afdeling Landbouweconomie, K.U.Leuven, June 1997, 20 p.
- nr. 49 TOLLENS, E., *International Trade and Trade Policy in Livestock and Livestock Products*, NATURA-NECTAR COURSE: "Agricultural Economics and Rural Development", module 4, Afdeling Landbouweconomie, K.U.Leuven, October 1997, 43 p.
- nr. 50 DESMET, A., *Working towards autonomous development of local farmer organisations: which role for development agencies?*, Department of Agricultural Economics and Center for Economic Research, March 1998, 49 p.
- nr. 51 TOLLENS, E., *Catalogue de titres dans la bibliothèque ALEO sur le Zaïre - Congo*, Département d'Economie Agricole, Mars 1998, 96 p.

- nr. 52 DEMONT, M., JOUVE, P., STESENS, J., et TOLLENS, E., *Evolution des systèmes agraires dans le Nord de la Côte d'Ivoire: les débats « Boserup versus Malthus » et « compétition versus complémentarité » révisités*, Département d'Economie Agricole et de l'Environnement, K.U.Leuven, Avril 1999, 43 p.
- nr. 53 DEMONT, M., and TOLLENS, E., *The Economics of Agricultural Biotechnology: Historical and Analytical Framework*, Department of Agricultural and Environmental Economics, K.U.Leuven, October 1999, 47 p.
- nr. 54 DEMONT, M., en TOLLENS, E., *Biologische, biotechnologische en gangbare landbouw: een vergelijkende economische studie*, Afdeling Landbouw- en Milieueconomie, K.U.Leuven, Maart 2000, 53 p.
- nr. 55 DEMONT, M., JOUVE, P., STESENS, J., and TOLLENS, E., *The Evolution of Farming Systems in Northern Côte d'Ivoire: Boserup versus Malthus and Competition versus Complementarity*, Department of Agricultural and Environmental Economics, K.U.Leuven, August 2000, 25 p.
- nr. 56 DEMONT, M., and TOLLENS, E., *Economic Impact of Agricultural Biotechnology in the EU: The EUWAB-project*, Department of Agricultural and Environmental Economics, K.U.Leuven, January 2001, 16 p.
- nr. 57 DEMONT, M., and TOLLENS, E., *Reshaping the Conventional Welfare Economics Framework for Estimating the Economic Impact of Agricultural Biotechnology in the European Union*, Department of Agricultural and Environmental Economics, K.U.Leuven, March 2001, 32 p.
- nr. 58 DEMONT, M., and TOLLENS, E., *Uncertainties of Estimating the Welfare Effects of Agricultural Biotechnology in the European Union*, Department of Agricultural and Environmental Economics, K.U.Leuven, April 2001, 81 p.
- nr. 59 DEMONT, M., and TOLLENS, E., *Welfare Effects of Transgenic Sugarbeets in the European Union: A Theoretical Ex-Ante Framework*, Department of Agricultural and Environmental Economics, K.U.Leuven, May 2001, 39 p.
- nr. 60 DE VENTER, K., DEMONT, M., and TOLLENS, E., *Bedrijfseconomische impact van biotechnologie in de Belgische suikerbietenenteelt*, Afdeling Landbouw- en Milieueconomie, K.U.Leuven, Juni 2002, 66 p.
- nr. 61 DEMONT, M., and TOLLENS, E., *Impact of Agricultural Biotechnology in the European Union's Sugar Industry*, Department of Agricultural and Environmental Economics, K.U.Leuven, June 2002, 55 p.
- nr. 62 DEMONT, M., and TOLLENS, E., *The EUWAB-Project: Discussion*, Department of Agricultural and Environmental Economics, K.U.Leuven, August 2002, 20 p.

- nr. 63 DEMONT, M., DELOOF, F. en TOLLENS, E., *Impact van biotechnologie in Europa: de eerste vier jaar Bt maïs adoptie in Spanje*, Afdeling Landbouw- en Milieueconomie, K.U.Leuven, Augustus 2002, 41 p.
- nr. 64 TOLLENS, E., *Food Security: Incidence and Causes of Food Insecurity among Vulnerable Groups and Coping Strategies*, Department of Agricultural and Environmental Economics, K.U.Leuven, September 2002, 30 p.
- nr. 65 TOLLENS, E., *La sécurité alimentaire: Incidence et causes de l'insécurité alimentaire parmi les groupes vulnérables et les stratégies de lutte*, Département d'Economie Agricole et de l'Environnement, K.U.Leuven, Septembre 2002, 33 p.
- nr. 66 TOLLENS, E., *Food Security in Kinshasa, Coping with Adversity*, Department of Agricultural and Environmental Economics, K.U.Leuven, September 2002, 35 p.
- nr. 67 TOLLENS, E., *The Challenges of Poverty Reduction with Particular Reference to Rural Poverty and Agriculture in sub-Saharan Africa*, Department of Agricultural and Environmental Economics, K.U.Leuven, September 2002, 31 p.
- nr. 68 TOLLENS, E., *Het voedselvraagstuk*, Afdeling Landbouw- en Milieueconomie, K.U.Leuven, September 2002, 71 p.
- nr. 69 DEMONT, M., WESSELER, J., and TOLLENS, E., *Biodiversity versus Transgenic Sugar Beet: The One Euro Question*, Department of Agricultural and Environmental Economics, K.U.Leuven, November 2002, 33 p.
- nr. 70 TOLLENS, E., and DEMONT, M., *Biotech in Developing Countries: From a Gene Revolution to a Doubly Green Revolution?*, Department of Agricultural and Environmental Economics, K.U.Leuven, November 2002, 8 p.
- nr. 71 TOLLENS, E., *Market Information Systems in Liberalized African Export Markets: The Case of Cocoa in Côte d'Ivoire, Nigeria and Cameroon*, Department of Agricultural and Environmental Economics, K.U.Leuven, November 2002, 19 p.
- nr. 72 TOLLENS, E., *Estimation of Production of Cassava in Bandundu (1987-1988) and Bas Congo (1988-1989) Regions, as Compared to Official R.D. Congo statistics*, Department of Agricultural and Environmental Economics, K.U.Leuven, December 2002, 29 p.
- nr. 73 TOLLENS, E., *Biotechnology in the South: Absolute Necessity or Illusion?*, Department of Agricultural and Environmental Economics, K.U.Leuven, December 2002, 29 p.
- nr. 74 DEMONT, M., BONNY, S., and TOLLENS, E., *Prospects for GMO's in Europe*, Department of Agricultural and Environmental Economics, K.U.Leuven, January 2003.