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Small and medium-sized plant production companies and intra-regional trade: the case of Mali in the ECOWAS region

Abstract

Our article aims to promote the link between the participation of small and medium-sized crop production companies and intra-regional exchange from Mali within the ECOWAS region. Indeed, it first examines the importance of the mango production basins of (Sikasso, Bamako and Koulikoro) illustrated in (figure no. 2. Then the article shows that, mangoes from Mali are intended mainly for three geographical areas: Europe, Maghreb and Africa. Finally, the article identified the profile of the actors operating in intra-regional ECOWAS trade in plant production, in particular the mango sector. This mainly concerns the profile of the suppliers and applicants in the production activities of the mango sector On the other hand, the economic literature remains poorly documented on the subject, especially very specifically for our region. Among the studies which are interested in our subject, we can cite: that of (Bassolé, 2022; Ibrahim Ag Abdoulaye Ag Sid Ahmad, 2020). ECOWAS intra-regional trade.

Keywords
Micro businesses, intra-regional exchange, ECOWAS area, Mali

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INTRODUCTION

In West Africa, intra-regional trade between countries remains relatively low. According to recent studies, it represents between 10 and 15% of total trade in the ECOWAS zone. Trade between European and Latin American countries accounts for around 80% and 60% respectively.

Overall, mango production represents a strategic activity in the development of intra-regional trade in West Africa. According to statistics from the Strategic Orientation of the Mango Value Chain in West Africa, mango production reached 1.2 million tonnes per year (3.8% of world mango production).

At the same time, exports represented 34,000 tonnes per year (2.7% of world exports). The industry's integration strategy is based on networks of social relations between various trade players, traders and transporters in border areas.

The weakness of intra-ECOWAS trade remains based on natural comparative advantages, and thus on the absence of agricultural and agro-industrial enterprise development. The weak development of intra-trade in the mango sector is underpinned by a lack of dynamism and enterprise development.

In addition to its overall embryonic character, there is a strong disparity by country in the business development process. In the case of Mali, for example, business development efforts in the production and export of mango and mango juice are relatively significant, as is trade.

Examination of the distribution curve of companies in Mali, by size and by sector, follows the normal distribution of statistics. Indeed, the distribution curve shows a minority of large and medium-sized companies (Bassolé, 2022).

The distribution curve is asymmetrical to the left, i.e. the proportion of large and medium-sized companies is relatively low, around 20%.

It is unevenly distributed between :

- medium-sized companies,
    - These include sugarcane explorers, used by Chinese companies in the Markala zone (sukala 1 and 2);
- and large companies such as Office du Niger.

Our work focuses on the right-hand side of the curve, i.e. the proportion of large and medium-sized plant production companies in Mali's intra-regional trade within the ECOWAS zone.

A review of the literature on regional trade reveals two models of approach

i. The first model considers regional trade as an opportunity, a resource for both populations and states, along the lines of studies carried out by (Coulibaly, J and Diarrisso, T. (2015) ; Diarra. M.M, (2004) ; Igue et Soulé, 1992 ; Amselle J.L. et Gregoire, 1988);

ii. In contrast, the second model is based on the role of merchants in cross-border trade, as highlighted by (Bassolé, 2022; Dabié Désiré Axel NASSA, 2005).

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Our article deals with “the link between the participation of small and medium-sized enterprises and Mali's intra-regional trade within the ECOWAS zone”. It focuses on the role of the profile of intra-regional trade actors in the dynamics of trade relations for crop production within the ECOWAS zone.

The general aim of our article is to examine the link between intra-regional trade flows and the size of the plant production business. In other words:

What factors limit the link between small and medium-sized production companies and intra-regional trade Mali's intra-regional trade within the ECOWAS AREA?

This article is based on two main hypotheses:

i. intra-regional trade flows in crop production positively influence the size of enterprise activity;

ii. the dynamics of crop production activities determine the profile of intra-regional trade actors.

Our methodological approach is based firstly on data collection and secondly on information processing.

i. Data collection

This consists of collecting data from our two-stage survey on the profile of players operating in intra-regional trade (Ibrahim BASSOLE thesis, 2022), to which must be added economic statistics from ECOWAS countries, UEMOA, UNCTAD, INSAT and the Ministry of Economy and Finance, as well as information collected on the Internet.

ii. Data processing

We used descriptive statistics, general economic analysis and mathematics to process the information collected above. This information has been processed manually, using tables and diagrams illustrated throughout the article.

Our article is structured into two questions to address (i) the dynamics of crop production activities (ii) the dynamics of the profile of intra-regional trade actors (iii).

I. Dynamics of crop production activities

In contrast to the cereals sector, which is dominated by small-scale family farms, the fruit (plantation) and vegetable (market gardening) sectors are specialized according to size.

The sector is dominated by mango production. On the other hand, green beans, onions, potatoes, tomatoes, cabbages and cucumbers are mainly destined for the local market. Mali's mango exports were estimated at 1,805 tonnes in 2002 and 1,830 tonnes in 2003.

The choice of the “mango” sector therefore represents a strategic challenge for the country, since domestic demand is growing fast and export options to the sub-region and Europe are considerable.

Let's look first at the growth of production activities in the mango sector, and then at the vectors of this growth.

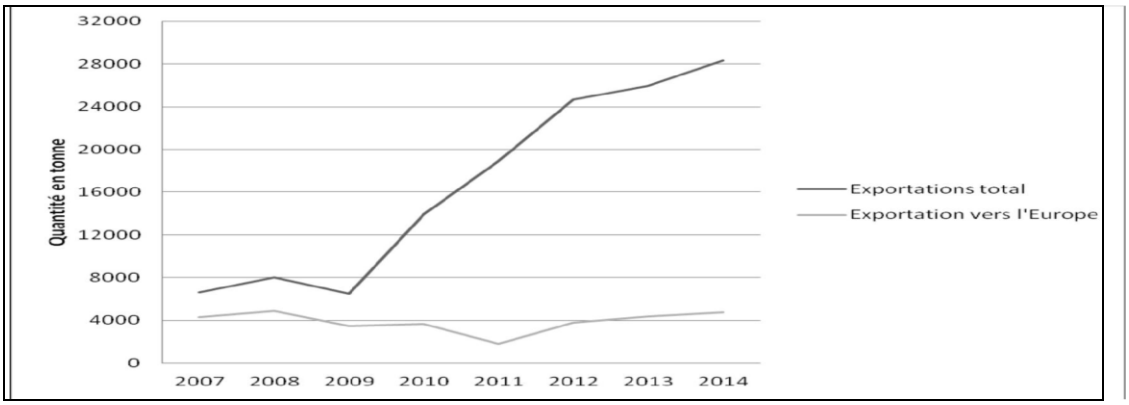
1. Growth in production activities in the mango sector

Recent studies in Mali show that the total volume of fresh mangoes exported to African and European markets rose from 6,586 tonnes in 2007 to 28,328 tonnes in 2014 (as shown in figure 7).

The choice of the “mango” sector therefore represents a strategic challenge for the country, since domestic demand is growing fast and export options to the sub-region and Europe are considerable.

Figure 1

Evolution of fresh mango exports over the period 2007-2014 in tons



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Source : FAO Statistics, IFM-Mali, 2014

Despite the opportunities available to Mali on the European fresh mango market, the figure above shows a stagnation in Malian exports to Europe. This situation can be explained by the fact that food standards, including public sector regulations and private company standards, have increased considerably over the last few decades.

Mango exports to Europe must comply with a series of restrictive regulations imposed by public authorities, including marketing standards, labeling requirements, food contamination regulations, general hygiene rules and traceability requirements.

Also, although private standards are not a legal obligation, they are de facto imposed due to the fact that a large proportion of buyers require compliance with phytosanitary standards in international agri-food markets, such as those of the Global GA.

These problems of complying with quality standards become difficult for small-scale producers, who account for almost all fresh mango supplies (90%). These small producers have traditional orchards of between 2 and 3 ha, and have neither the income nor the expertise to comply with phytosanitary standards.

Comparing the total volume of fresh mangoes exported from Mali with that destined for European markets. We can see that the export curve for fresh mangoes from Africa is included in the interval between the total export curve and that for European markets.

Mali's fresh mango production potential is estimated at 575,000 tonnes. The main mango production areas are :

- Sikasso (70% of national production) ;

- and Koulikoro/Bamako suburbs (19 and 11% of national production).

Production is generally carried out by small owners of mostly traditional orchards of between 2 and 3 ha. Alongside these small orchards, there are large orchards, particularly in the Sikasso region, ranging in size from 50 to 100 ha. On the other hand, growers find it difficult to determine the actual total mango production of their orchards, but the same studies quoted above show that the average production potential of traditional mango orchards would be 4t/ha.

The Sikasso, Koulikoro and Bamako basins offer climatic and edaphic conditions conducive to quality mango production. The organoleptic quality of varieties such as Kent, Keit, Valencia and Amélie is a prerequisite for promoting the fresh mango export sector.

Furthermore, the geographical proximity of the European market is a significant advantage for the West African zone, as the major mango production sites in Asia and Latin America are far away.

Mango from Mali is mainly marketed :
- within the country ;
- in Africa ;
- and in Europe

Mali exported 18,399 tonnes of mangoes to other African countries, i.e. 72.29% of total exports. According to the same studies cited above, Mali exports 6,916 tonnes of mangoes to Europe, i.e. 27.19% of total exports, with a large proportion of these exports transiting by sea. What's more, European consumers want mangoes on a regular basis and in all seasons.

This constant, year-round demand offers marketing opportunities for West African producers and exporters. The harvesting and marketing of West African mangoes coincides with the end of deliveries from Brazil and Peru (the main suppliers, with 68% of the European Union mango market in 2011).

These two major producers reach European markets from October to March, while mangoes from West African countries are available from March to June, and even until August for those from Senegal.

This calendar advantage favors greater marketing of West African mangoes in general, and Mali's in particular, as a means of fighting poverty by increasing rural incomes, especially for small-scale mango growers.

Six varieties (Kent, Keit, Amélie, Tommy Atkins, Palmer and Valencia) are prized and exported outside Mali. Mango for local consumption is sold on the local market without any processing.

Apart from exports, there are few reliable statistics on mango sales on the local market. Exports of fresh mango to other markets in Africa and Europe are handled by some fifteen companies located mainly in Bamako and Sikasso.

Faced with these problems, the Malian government, with the support of certain organizations and/or programs involved in the mango sector, has put in place strategies to help small producers gain access to the European market.

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Table n°1 : Producer price of fresh mango for export in 2013 and 2014

price Mango variet	18 Kg case price in FCFA		Price (FCFA)/Kg	
	2013	2014	2013	2014
Kent	1500	1600	83,3	88,9
Keit	1100	1200	61,1	66,7
Amélie export	750	750	41,7	41,7
Valencia	1000	1000	55,6	55,6
ther exportable varieties	750	750	41,7	41,7

Source : IFM-Mali report, 2014

2. Growth vectors

The growth vector of the mango sector is linked to supply and demand on the European market.

2.1 Supply

In terms of supply, the 2017 campaign focused on the production and sale of seedlings by nurseries and production-realization.

2.1.1 Seedling production by nurserymen

Plant production by variety is shown in Table 2 below:

- the Sikasso basin accounts for 3,566,233 plants per variety;
- the Bamako and Koulikoro basins, with 69,213 and 108,690 plants per variety respectively.

Table 2: Plant production by variety

Production basin	Number of plants produced per variety				TOTAL
	KENT	KEÏTT	AMELIE	AUTRES	
Sikasso	525 180	350 220	207 120	2 483 713	3 566 233
Bamako	9 470	568	4 880	54 295	69 213
Koulikoro	19 650	18 000	3 640	67 400	108 690

Source : Report on the 2017 IFM-Mali mango season

On the other hand, the rate of achievement of mango production forecasts by production basin (Table 3 below) shows :

- Sikasso basin in the lead, with 133% of forecasts achieved;
- the Bamako and Koulikoro basins, with 81% and 72% respectively.

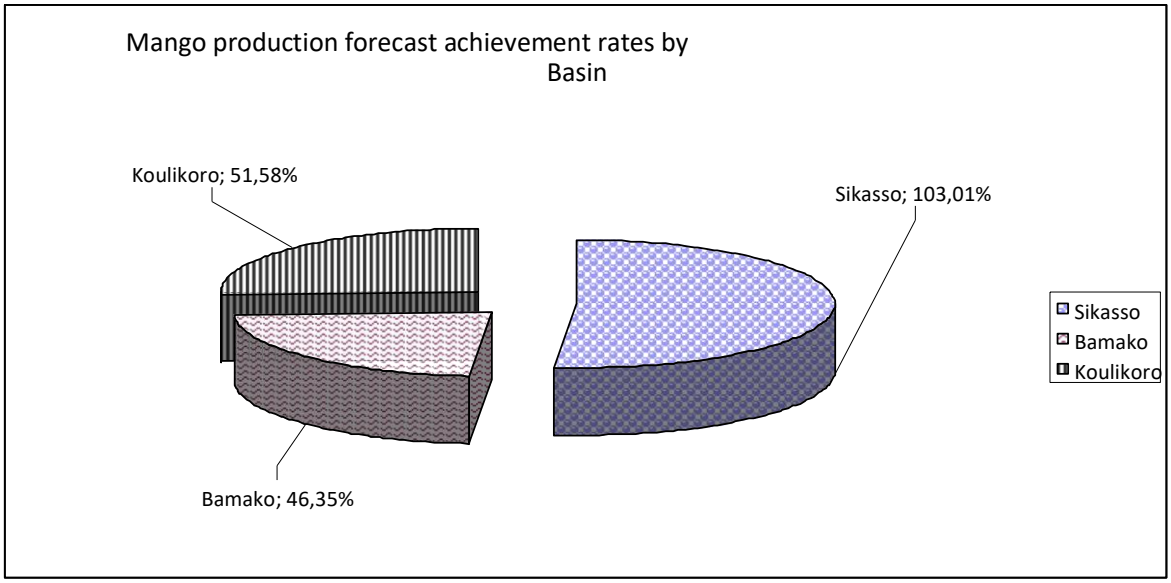
Table 3 : Production and sales of seedlings

Bassin de production	Production			Vente	Prix-unitai re	Montant (F.CFA)
	Prévision	Réalisation	Taux de réalisation (%)			
Sikasso	3 000 000	4 000 000	133%	3 566 233	400	1 426 493 200
Bamako	85 000	69 213	81%	13 450	500	6 725 000
Koulikoro	150 000	108 690	72%	46 665	600	27 999 000
TOTAL	3 235 000	4 177 903	129%	3 626 348	500	1 461 217 200

Source : Report on the 2017 IFM-Mali mango season

The same table n°3 above highlights the importance of the three mango production basins (Sikasso, Bamako and Koulikoro) in the production-realization and sale of seedlings illustrated in figure n°2 below.

Figure 2: Heterogeneity of the three basins in the production-realization and sale of mango plants in Mali



Source : Report on the 2017 IFM-Mali mango season

2.1.2 Assessment of production-related constraints and proposed solutions

Table 4 below illustrates the problems associated with exporting mangoes, with proposed solutions.

Table n°4 :

Constraints linked to production and proposed solutions

Constraints	Proposed de solutions
1. Insufficient phytosanitary treatment against mango tree pests; 2. Divagation des animaux ; 3. Insuffisance des techniques de maitrise d'entretien ; 4. Vieillissement des vergers ; 5. Morcellement de certains vergers en terrain à usage d'habitation.	1. Poursuivre le traitement des vergers tout en mettant en place une stratégie efficace de lutte contre les insectes nuisibles aux manguiers ; 2. Appuyer les producteurs dans la sécurisation des vergers ; 3. Former les producteurs en techniques d'entretien des vergers ; 4. Sensibiliser les producteurs à mettre en place des vergers commerciaux et convertir les vergers.
6. La bactériose	5. Avoir l'autorisation pour l'utilisation du MIRAGE 450 EC contre la bactériose (voir l'IER)

Source : Rapport Bilan campagne mangue 2017 IFM-Mali

2.2 Demand

Demand is divided between local domestic consumption and external demand.

2.2.1 Domestic demand

According to some studies, mango production in Mali comes mainly from three basins:

- the Sikasso basin ;
- the Bamako basin

- the Koulikoro basin.

The Sikasso basin is the largest, with 16,273.00 tonnes of fresh mango. The breakdown by variety is as follows

- Amélie remains the most exported variety, with 8,287.50 tonnes;
- Kent, 4,415.50 tonnes.

Table 5 : Quantities of mango sold on Sikasso markets (by variety and destination market)

Bassins	Destinations	Volume Exporté par Variété et par Tonne				
		Kent	Keïtt	Amélie	Autres	Total
Sikasso	Mopti,Ségou, Gao,Sikasso	3712,5	1299,5	6858,5	1283	13153,5
	Sélingué	125		73	70	268
	Mopti	44		963	61,5	1068,5
	Bgni et Bko	200	105	148	83	536
	Sikasso, Mopti, Zones d'orpaillages	154	70	139	87	450
	CEDIAM-Bougouni	59	68	76	102	305
	CEDIAM, Bougouni et Bko	121	305	30	36	492
	Total Sikasso	4 415,50	1 847,50	8 287,50	1 722,50	16 273,00

Source : Report on the 2017 IFM-Mali mango season

On the other hand, the Koulikoro and Bamako basins are relatively less important, with 5,275.13 and 1,210.00 tonnes of fresh mango respectively. A large proportion of mango is consumed locally in the country, i.e. 22758.13 tonnes were consumed in Mali in 2017 (table n°19). This mainly concerns the supply of deficit regions during the production period.

Table 6 : Quantities of mango sold on Bamako markets (by variety and destination market)

Bassins	Destinations	Volume Exporté par Variété et par Tonne				
		Kent	Keïtt	Amélie	Autres	Total
Bamako	Consommation à BKO	197,00	566,00	200,00	66,00	791,00
	Kayes	10,00	45,00	20,00		40,00
	Nara	40,00	10,00	30,00	20,00	90,00
	Nioro du Sahel	10,00			10,00	20,00
	Mopti	10,00		20,00		30,00
	Nioro, Sélingué	90,00	102,00		47,00	239,00
	Total Bamako	357,00	440,00	270,00	143,00	1 210,00

Source : Report on the 2017 IFM-Mali mango season

In addition, Table 7 illustrates the interdependence of the markets in Koulikoro, Bamako (Table 6) and certain regions in terms of fresh mango production and trade (illustrated in Table 7 below).

Table 7 : Quantities of mango sold on Koulikoro markets (by variety and destination market)

Bassins	Marchés	Destinations	Volume Exporté par Variété et par Tonne				
			Kent	Keïtt	Amélie	Autres	Total
Koulikoro	Marché de Koulikoro	Bko, Niono, Sélingué	101,00	132,00	147,00	215,00	595,00
		Consommation de KKO	67,00			7,00	74,00
	Marché de Kati	Kayes				23,25	23,25
		Bamako	38,00		50,00	19,00	107,00
		Kayes, Diboli, Nara			12,00	195,00	207,00
		Nara		18,00			18,00
		Bko, Consommation Kati	24,00				24,00
		Dioro, Macina, Niono	60,00	70,00	100,00	110,00	340,00
		Bamako/Kayes			105,00	59,00	164,00
		Bamako	27,00	22,00		151,00	200,00
	Marché Ouéléssébougou			5,47	29,00		34,47
						10,00	10,00
	SIBY					600,00	600,00
						150,00	150,00
			1 240,00		360,00	510,00	2 110,00
	Poste de Kati					63,41	63,41
			120,00		45,00		165,00
	Coop-Producteurs Baguineda		50,00	150,00	155,00	35,00	390,00
	Total Koulikoro		1 727,00	397,47	1 003,00	2 147,66	5 275,13
	TOTAL MARCHE NATIONAL		6 499,50	2 684,97	9 560,50	4 013,16	22 758,13

Source : Report on the 2017 IFM-Mali mango season

2.2.3 External demand

Mali's mangoes are mainly destined for three geographical areas.

2.2.3.1 Europe zone

In 2017 on table n°8 below, Mali exported 6,440.12 tons of fresh mangoes of all varieties to Europe as follows:

- Kent and Keitt are the most exported;
- Holland is the leading European country interested in Mali mangoes, with 2,471.27 tonnes;
- France with 1,841.52 tons;
- England 1929.9 tons.

Tableau n°8 : volume de mangues exportées vers l'Europe par pays de destination

Bassin	Destinations	Volume exporté par variété et en Tonne				
		Kent	Keïtt	Amélie	Autres	TOTAL
	France	1 105,94	618,95	66	50,62	1 841,52
	Espagne	58,12				58,12
	Angleterre	1 235,36				1 235,36
	Hollande	2 070,95	400,32			2 471,27
	Belgique	72,28	26,24		4,25	102,77
	Allemagne	510,48	217,6	3		731,08
	TOTAL	5 053,13	1 263,12	69,00	54,57	6 440,12

Source : Report on the 2017 IFM-Mali mango season

1.1.1.1 Zone Maghreb

Avec 2076,14 tonnes de mangue importé, le Maroc représente une opportunité pour les exportateurs Maliens. Parmi les variétés exportées, nous avons :

- la Kent qui domine avec 1705,86 tonnes ;
- l'Amélie avec 191,28 tonnes.

Tableau n°9 : volume de mangues exportées vers le Maghreb par pays de destination

Bassin	Destinations	Volume exporté par variété et en Tonne				
		Kent	Keïtt	Amélie	Autres	TOTAL
	Maroc	1 705 ,86	179	191,28	0	2 076,14
	TOTAL	1 705 ,86	179,00	191,28	0.00	2 078,14

Source : Report on the 2017 IFM-Mali mango season

2.2.2.5 Africa zone

The volume of mangoes exported by variety from Mali to the rest of Africa is shown in table 10 below:

- Kent and Keitt are the most widely exported varieties;
- Senegal is the first neighboring country most interested in Mali's mangoes, with 2,582.88 tons;
- Burkina Faso with 2011.65 tonnes;
- Mauritania with 1929.9 tonnes.

Table n°10 : volume of mangoes exported to Africa by country of destination

Bassin	Destinations	Volume exporté par variété et en Tonne				
		Kent	Keïtt	Amélie	Autres	TOTAL
	Burkina	1395,03	164,52		452,1	2 011,65
	Ghana	1 704,00				1 704,00
	Sénégal	1 701,73	596	337,15	8	2 642,88
	Mauritanie	1265	368	143,9	93	1 869,90
	C.Ivoire	65,28			21,76	87,04
	Gabon	0	46,24	0	0	46,24
	TOTAL	6 131,04	1 174,76	481,05	574,86	8 361,71

Source : Report on the 2017 IFM-Mali mango season

I. Dynamics of the profile of intra-regional trade players

Let's now take a look at the profile of supply and demand players in mango production activities.

2. Suppliers

Suppliers here comprise four profiles of intra-regional trade players: producers, intermediaries, networks and traders.

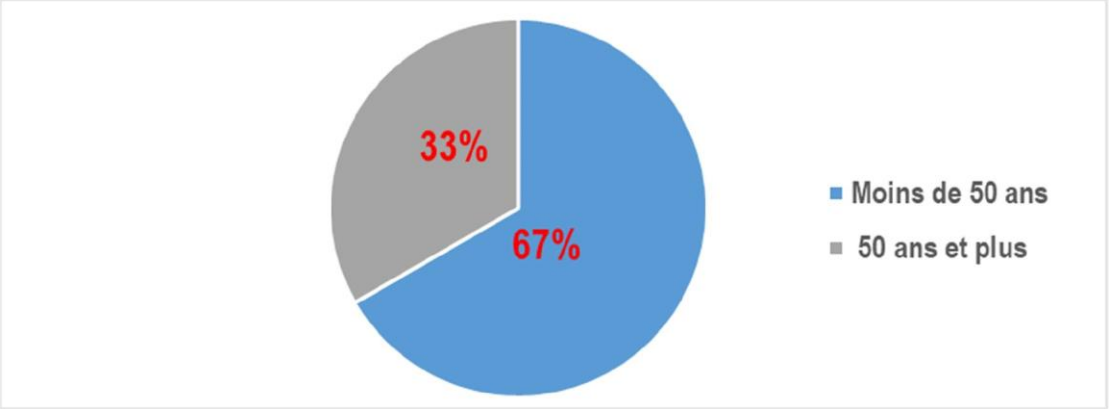
3.1 Producers

Mango production is largely carried out by small-scale producers, organized in certain production basins into cooperatives or producer groups.

- The typology of players remains that of the family farm;
- orchards are owned by individual growers who sell their produce harvested at the edge of the field.

With the introduction of certifications (GLOBAL-GAP and BIO), growers draw up contracts with exporters. These contracts are often individual, but negotiated between producer groups and exporters. According to certain studies, notably that of Ibrahim Ag Abdoulaye Ag Sid Ahmad, carried out in 2020, the average age of mango growers is 50. In figure 9 below, growers aged under 50 represent 33% of our sample, and 67% of growers aged 50 and over.

Figure n°3: distribution of mango producers according to age



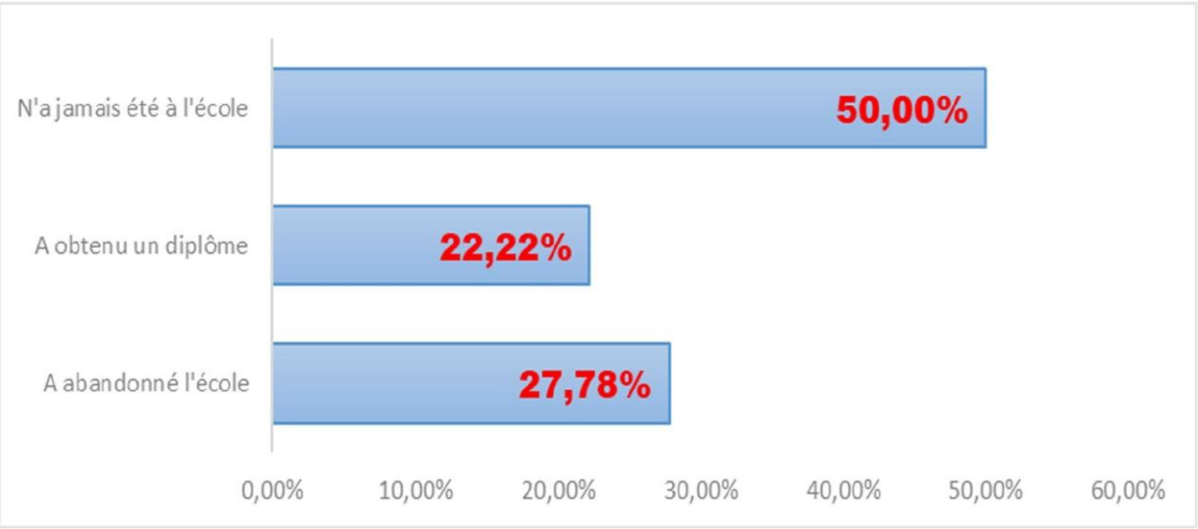
Source: Ibrahim Ag Abdoulaye Ag Sid Ahmad Study, 2020

As a result, mango production in Mali is partly carried out by older growers. In addition, 90.6% of those involved in mango production in Mali are men.

On the other hand, figure 4 shows that the overall level of education among growers remains fairly low, with 42.40% of growers never having attended school, 24.10% having dropped out, 17.60% having received instruction in the national language, 14.70% having obtained at least the DEF diploma (diplôme d'études fondamentales), and a small number (1.20%) still attending school.

In addition, these producers have an average of 25 years' experience in mango production, and own an average of 5 hectares of mango orchards.**Figure n°4 :** niveau d'instruction des producteurs de mangues

Figure n°4: educational level of mango producers



Source: Ibrahim Ag Abdoulaye Ag Sid Ahmad Study, 2020

However, these uncertainties about quality still remain. Diakité (2015) highlights that the fresh mango export sector recorded a loss of more than 40% of production during the 2015 campaign. This situation led some exporters to opt for complete integration.

2.2 Intermediaries

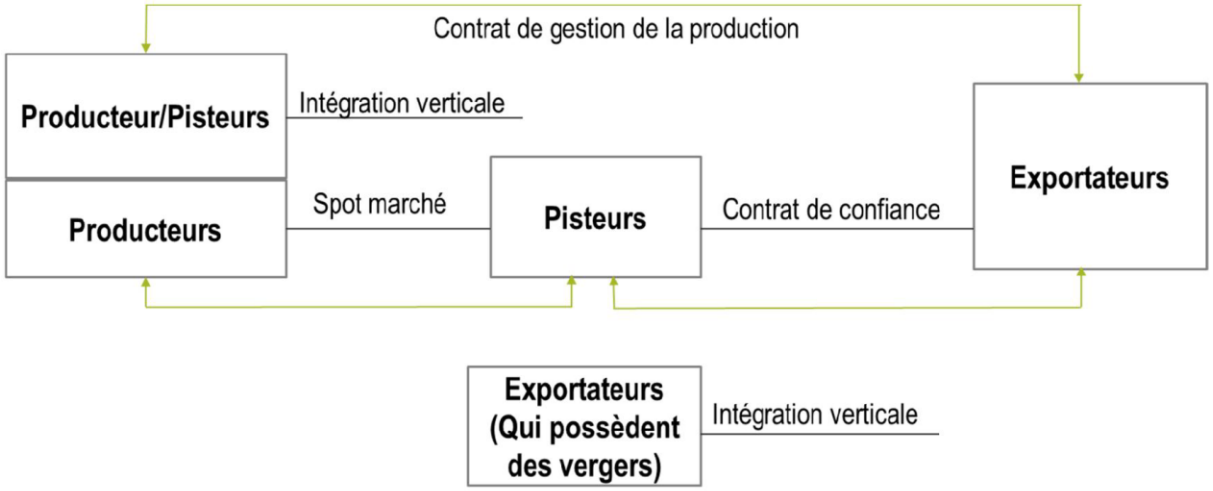
Intermediaries here include mango collectors and input suppliers.

2.2.1 Mango collection

Mango collection is carried out by trackers, who act as intermediaries between small-scale producers and exporting companies. This is an important link in the chain, but it is used by informal players who are difficult to identify. In this context, integration schemes have been developed by some exporters involved in GLOBAL-GAP and BIO certification.

Figure 5 below illustrates the vertical coordination methods used by some exporters to guide players in the fresh mango export chain, in order to ensure a stable supply and reduce quality uncertainties (see figure 5).

Figure n°5 : Modes of vertical coordination present in the fresh mango export sector from Mali



Source: Ibrahim Ag Abdoulaye Ag Sid Ahmad Study, 2020

2.1.1 Input suppliers

They bring together service providers who ensure the supply of inputs (supply of certified plants for certified circuits) and that of boxes for packaging (putting into boxes) mango. Plant suppliers or nurserymen work in the production of mango tree plants.

They are grouped within a Malian Federation of Mango Plant Producers (FEMAPROMA) (PDS-IFM-Mali, 2015). Indeed, Mali imports almost all of the boxes from countries such as

Senegal, Ivory Coast, Nigeria but also from Europe, coming from the Netherlands in particular (Diakité, 2015).

2.1.2 Networks

The networks are illustrated here by:

- marketing channels for fresh mangoes from Mali
- producer - exporter relationship
- mango exports;
- post-harvest infrastructure;
- Actions by donors to develop the sector;
- Actions of exporters facing the requirements of European standards;
- freight forwarders.

2.1.2.1 Marketing channels for fresh mangoes from Mali

In Mali, there are two marketing circuits for fresh mango, namely, a short circuit which mainly concerns the production areas towards local markets and those of other cities in the country. These markets are located either at the village level or at the city level (Diarra, 2004).

In addition to the short circuit, the long circuit or export circuit represents the second marketing circuit for fresh mango in Mali. This activity is partly carried out by private companies such as Mali Yiriden, AOM, fruitière du Lotio, TEM, SCS international, Yafa et Frères, etc. (PCDA, 2009).

These companies are responsible for purchasing (collecting) and packaging mangoes intended for export. In this case, exporters maintain direct (producer-exporter) or indirect (producer-tracker-exporter) relationships with mango producers (Diarra, 2004).

2.1.2.2 Producer – Exporter Relationship

This is a circuit that is little used in the export of fresh mangoes to Mali, but which remains significant in practice. We most often observe in the event of urgent needs of exporters for which the producers go directly through the exporting buyers (safe clientele), thus dispensing with the services of trackers.

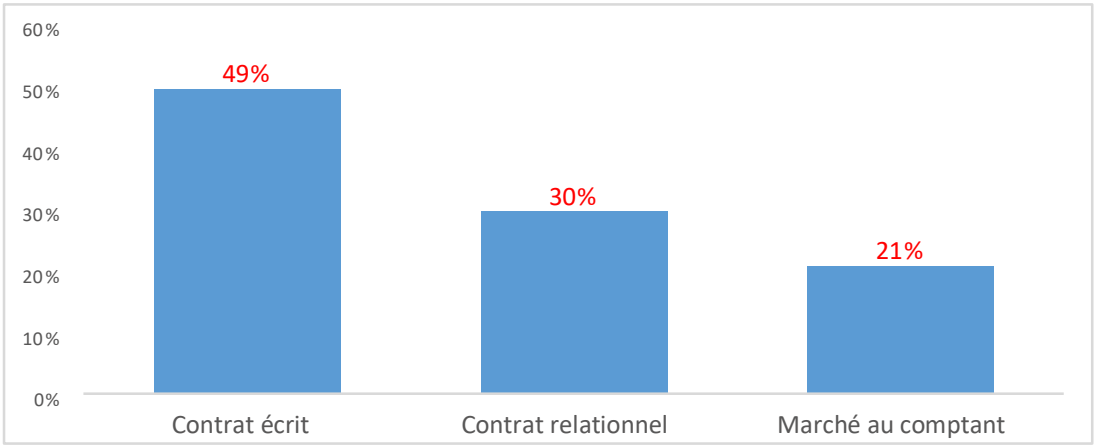
Under these conditions, the costs related to picking and transport are the responsibility of the producer. In fact, more and more producers are integrating the mango collection activity (trackers), to be more informed about price determination and to have more margin.

In this type of circuit, three governance mechanisms or mode of coordination govern the relations between producers and exporters (see figure no. 12):

- In this type of circuit, three governance mechanisms or mode of coordination govern the relations between producers and exporters (see figure no. 12):
- Secondly, we have market governance, although this mechanism is not prioritized to regulate transactions linked to perishable products like mangoes. Thus, some producers sell their production through spot markets in the sense that they do not have much confidence in their ability to meet the requirements of a formal contract and are not informed of the problem (non-valuation of mangoes on the external market) linked to the non-use of certification.

This figure n°6 illustrates that contracts (written [49%] and relational [30%]) are the preferred vertical coordination mechanism in the producer-exporter relationship. This method of vertical coordination is used by 21% of producers met.

Figure n°6 : Modes of vertical coordination in the producer-exporter relationship



Source: Ibrahim Ag Abdoulaye Ag Sid Ahmad Study, 2020

2.1.2.3 Export of mangoes

It concerns around fifteen companies in Burkina and around thirty in Mali in the export of mangoes. Some active Professional Organizations (POs) have been formed in these two countries :

i. In Mali :

Malian Association of Vegetable and Fruit Exporters (AMELEF);

- Professional Association of Fruit and Vegetable Exporters (APEFL) and Association of Young Exporters (AJEX). These two associations came together in April 2008 to create FEFEL (Federation of Fruit and Vegetable Exporters);
- The GIE Fruits and Vegetables of Mali (FRUILEMA).

ii. In Burkina Faso :

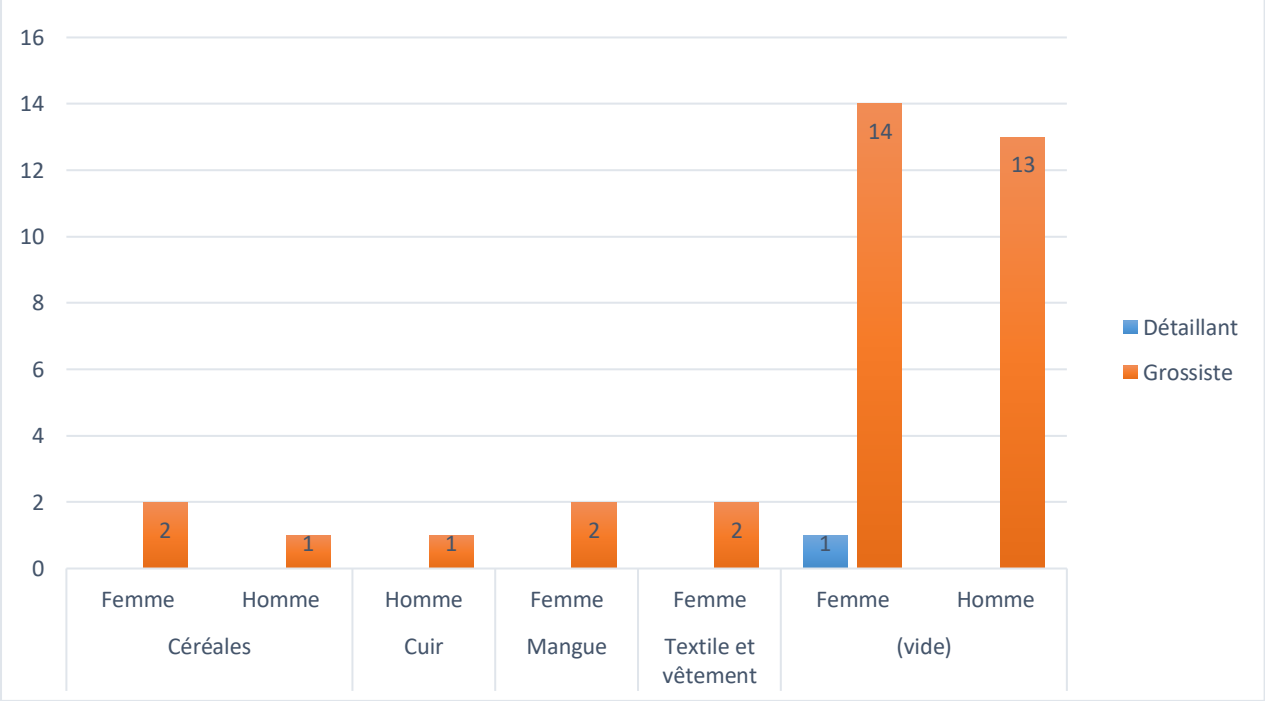
A mango inter-professional association, Association of Mango Professionals (APROMA–B) bringing together producers, exporters and processors was set up;

- Association for the Promotion of Exports of Fruits and Vegetables from Burkina (APEFEL-B);

- Association for the Promotion of Exports of Burkina (APEX-B).

It emerges from the analysis of figure no. 4 (p34) above that the mango sector is likely to explain the role of the size effect used in the wholesale activity compared to that of retail in intra-regional trade relations (illustrated in the second histogram of figure no. 4). On the other hand, Figure 7 below reveals that women remain very active, especially in the informal sector.

Figure n°7 : Size of the activity used according to the typical gender profile and goods exported



Source: Ibrahim BASSOLE study, 2022

2.1.2.4 Post-harvest infrastructure

Two public packaging stations for collective use have been set up:

- in Mali, the Logistics Perimeter Developed in the Agricultural Zone (Plaza) in Bamako;

- and in Burkina Faso, the Fruit Terminal Management Company (SGTF) in Bobo Dioulasso, with funding from the Netherlands and the World Bank respectively.

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2.1.2.5 Actions by donors to develop the sector

These are programs to support the development and professionalization of the mango sector at the producer level.

2.1.2.6 Actions of exporters in response to the requirements of European standards

Mango exporters realize that access to the European market follows compliance with European standards; however, the risks of non-compliance are linked to

- products: their degree of perishability;
- processes: mango cutting, preparation and packaging;
- operators: training, supervision and performance of the packaging station they use.

Faced with compliance with European standards, more and more companies or producer groups are setting up quality systems for Organic, Bio-Fair Trade or EUREPGAP (now GLOBAL-GAP) certification.

2.1.2.7 Freight forwarders

According to certain studies (notably Gergely, 2015; Coulibaly and Diarisso, 2015; Haidara, 2012), freight forwarders play the role of intermediaries between the Malian administrative authorities and exporting companies for all logistical operations, from containerization in Mali to the port of unloading of the product.

2.1.2.8 Carriers

Two modes of transport are used for the export of fresh mango, transport by air and transport by road.

iii. Air transport is used to satisfy specific demand (in particular, the organic market for example);

iv. Road transport represents the second type of transport used in intra-regional trade relations, illustrated in Bassolé, 2022 (in figure no. 8 below). Cars and trucks are commonly used in Mali in intra-regional trade operations.

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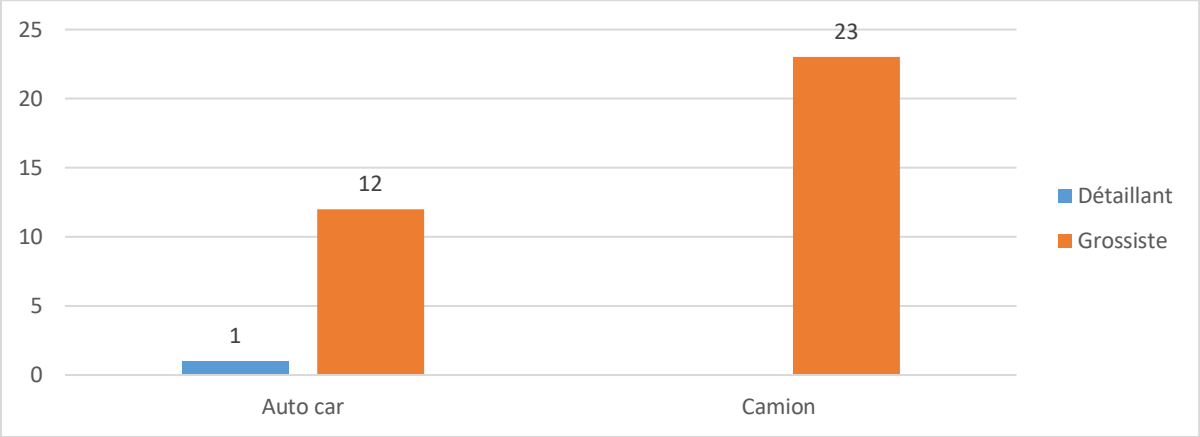
Figure n°8 : Size of the activity used depending on the means of transport used



Source: Ibrahim BASSOLE study, 2022

3. Applicant

Les demandeurs regroupent ici les consommateurs de mangue.

3.1 Consumers

Consumers are distinguished here by two actor profiles, small and medium-sized enterprises (SMEs) and large companies.

3.1.1 SMEs

Small and medium-sized enterprises (SMEs) are subsidiaries of foreign companies established in local developing countries, which have managed to dominate the mango sector market thanks to certain exporters from southern countries such as the case of Mali (Traoré, 2008).

3.1.2 Large companies

Large companies are efficient distribution networks both in their country of origin and in other European countries (Traoré, 2008). In fact, they carry out the formalities for the container's arrival in Europe and make the best use of the distribution circuits corresponding to the characteristics of the mango shipped.

II. Analysis of results and discussions

Two major contributions emerge from our article, namely:

i. Firstly, we showed the importance of three mango production basins (Sikasso, Bamako and Koulikoro) in the production-realization and sale of plants illustrated in (figure no. 2); On the other hand, mangoes from Mali are mainly destined for three geographical areas: Europe, Maghreb and Africa;

ii. Secondly, we showed the profile of the actors, these are mainly the suppliers and demanders in the production activities of the mango sector:

- The suppliers bring together four profiles of intra-regional trade actors: producers, intermediaries, networks and traders
- The applicants mainly concern mango consumers;

Indeed, we can see these results in certain similar studies including that observed by (Bassolé, 2022) on business development and intra-regional trade ECOWAS: case of Mali and (Ibrahim Ag Abdoulaye Ag Sid Ahmad, 2020) on Analysis of vertical coordination modes in the fresh mango export sector in Mali.

Conclusion

At the end of our article on the analysis of the link between Small and medium-sized plant production companies and intra-regional exchange from Mali within the ECOWAS area. Two main results emerge from our article:

i. on the one hand, we showed the importance of the mango production basins of (Sikasso, Bamako and Koulikoro) illustrated in (figure no. 2)
ii. Mangoes from Mali are mainly destined for three geographical areas: Europe, Maghreb and Africa;
iii. on the other hand, we identified the profile of the actors operating in intra-regional exchanges of plant production, in particular the mango sector;
iv. Ultimately, this mainly concerns the profile of suppliers and demanders in production activities in the mango sector.

To illustrate the constraints weighing on the development of the company in intra-regional trade, two constraints attracted our attention, in particular:

- strengthen local and regional value chains;

- strengthen payment mechanisms, linked to regional trade.

Our solution is as follows:

i. Local and regional value chains have an essential role in expanding the intra-regional common market, particularly in manufacturing. They also offer the possibility of improving the level of productivity and quality standards:

- on the one hand, for national companies with export potential;

- on the other hand, for those which produce goods intended mainly to satisfy national or regional demand.

In West Africa, the development of local and regional value chains could serve as a lever in the regional strategy to develop micro crop production enterprises.

ii. The financial system of most countries on the continent, particularly in West Africa, is far behind those of other regions of the world. Indeed, payment and credit procedures are cumbersome and complex, insurance, security and customs fees are costly.

These often poor services hamper trade within and outside the region. Many payment methods are used in business operations depending on the existing relationships between supply and demand.

The payment methods used can be grouped into three forms, such as payment on order, payment by cash and bank payment. Furthermore, certain studies show that the documentary credit payment system remains the most widely used payment method.

Indeed, this process takes an enormous amount of time, requiring the physical circulation of documents between different banking establishments in two countries and is poorly managed by many users. It should be noted that this system also lends itself to fraud.

In terms of perspective, it would therefore be interesting to extend this subject to the monetary union which is supposed to influence trade to the extent that it involves a reduction in uncertainty about the exchange rate, transaction costs and simplifies the calculation of costs and pricing decisions.

They also indicate that border effects would be reinforced by the use of a single currency. Thus, the effects of a monetary union would favor an increase in bilateral trade, an increase in the overall openness rate, a net creation of trade and the stability of trade.

Finally, this is an important subject but very little addressed in empirical studies. We hope that the results we obtained in this study will generate more empirical and theoretical investigations for other mechanisms or links between micro crop production enterprises and intra-regional exchange in the country.

BIBLIOGRAPHICAL REFERENCES

Bernardet, P. (1984) Agriculture-livestock association in Africa: the semi-transhumant Fulani

of Ivory Coast, Paris, Ed. Harmattan, 1984, pp. 3-5;
Coulibaly, J and Diarrisso, T. (2015). Access of small producers to markets: case study of the partnership model between SCS international and mango producers in Mali. 73 p.
CILSS (2010), Cross-border Trade and Food Security in West Africa, 1-7p
CIRAD & CILSS, 2009: Production and consumption areas for food crops in West and Central Africa, 1-40p
Dabié Désiré Axel NASSA (2005), Cross-border trade and structuring of space in Northern Ivory Coast, p 7-304;
Diarra. M.M, (2004). Study on the mango sector in the Sikasso region: Investigation report. 17p
Ecowas-TEN. (2011). Mango: Market News Service. 26p
Frank Hollinger; John M. Staatz, (2015). Agricultural growth in West Africa. Factors market and policy determinants. African Development Bank - Organization of the United Nations for Food and Agriculture.
Gregoire E, 1993: The trilogy of Hausa merchant networks: social, religious and state clientelism, Paris: Editions Karthala, pp 71 – 99;
Gregoire E, 1991: The paths of contraband: study of commercial networks in the country Hausa. Cahiers d'Etudes Africaines, n° 124, pp 509 – 532;
Gregoire E, 1989: State and merchant networks in the food trade in Niger. - 7 p.
Grégoire E. and Labazee E. (1993). Great traders of West Africa, logic and practices of a group of contemporary businessmen, Orstom, ed. Kartala, 527-546
Ibrahim Bassolé (2022), Business development and intraregional ECOWAS trade: case of Mali;
Ibrahim Bassolé (2015), Analysis of the determinants of Mali's exports in space ECOWAS, 6-44p;
IFM-MALI. (2014). Assessment of the collection, processing and analysis of statistical data on the production and marketing of mango;
IFM-MALI. (2014). Report of the day of validation of the assessment on the collection, processing and analysis of statistical data on the production and marketing of mangoes. Mali.
Igué J.O. 2010. The economic bases of precolonial West Africa, Mastery of space and development in Africa: State of play. Paris, Karthala, 99-113p;
Igué J.O. 2010. New territorial development strategies in West Africa, Mastery of space and development in Africa: State of play. Paris, Karthala, 209-222p;
Kouassi B., Sirpé G., Gogué A. (2006), Trade in agricultural products and sustainable food security in West Africa, Karthala, Paris, 1-22p;
Mahaman Moustapha Mamadou Koné (2015), West African merchants and markets cross-border workers: construction of a business community, 3-22p;
Melo, J. de, C. Montenegro and A. Panagariya, (1993), "Regional integration, yesterday and today", Development Economics Review, No. 2, p. 7-49
MDR, 2014: National Investment Plan in the Agricultural Sector, 2014, 3-25p
Olivier Cadot revised version, 2009: Trade development strategy in Mali, HAL Id: halshs-02136699