INTERNATIONAL AGRICULTURAL TRADE: IMPLICATIONS ON ETHIOPIAN AGRICULTURAL EXPORTS

PROCEEDINGS OF THE 5TH ANNUAL CONFERENCE OF THE AGRICULTURAL ECONOMICS SOCIETY OF ETHIOPIA

22-23 December 2000

Edited by

Workneh Negatu
Legesse Dadi
Abebe Haile Gabriel
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Agricultural Economics Society of Ethiopia (AESE)
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AGRICULTURAL ECONOMICS SOCIETY OF ETHIOPIA

The Agricultural Economics Society of Ethiopia (AESE) is a non-profit-making professional society established in 1995.

The objectives of AESE are to contribute to the development of Ethiopian agriculture by promoting research and development in agricultural economics, to promote the study of agricultural economics in the country's educational institutions, to promote agricultural research and assist in the dissemination of results, to provide fora for the discussion of problems of agricultural development, to promote the professionalism of agricultural economists, and to enhance contacts among agricultural economists and other related professionals in Ethiopia and abroad.

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FOREWORD

International agricultural trade and agricultural commodity exports have recently captured important attention in Sub-Saharan Africa as part and parcel of strategy of market liberalization. In this era of market liberalization, agricultural export markets are considered to play important roles in agricultural development in particular and in the growth of the national economy of Ethiopia in general.

The 5th Annual Conference of the Agricultural Economics Society of Ethiopia (AESE) dealt with this prominent public issue. At this juncture, AESE would like to extend heartfelt gratitude to USAID for sponsoring the conference.

This proceeding comprised, inter alia, key papers presented on the Conference including the place of agriculture in world trade, impact of WTO agreement on Ethiopia’s export, regional trade prospects among regional trade organizations like COMESA and IGAD.

AESE believes that bringing different views from different perspectives on key issues like impact of WTO on export performance and national sovereignty of developing countries like Ethiopia to discussion fora would help policy makers and planners in decision making and planning. In this regard, this proceeding is a small contribution.

The Editors
WELCOME ADDRESS

Dr. Demese Chanyalew
President, Agricultural Economics Society of Ethiopia (AESE)

Your Excellency Dr. Mengistu Huluka,
Minister of Agriculture of the Federal Democratic Republic of Ethiopia.
Invited Guests,
Members of the AESE,
Dear Conference Participants,

It is my great pleasure and honor to warmly welcome you, on behalf of the Executive Committee of the Agricultural Economics Society of Ethiopia (AESE), to the 5th Annual Conference of the Agricultural Economics Society of Ethiopia (AESE).

AESE organizes annual conferences in its endeavor to fulfill its constitutional objectives, which are to:

• contribute to the development of Ethiopian agriculture;
• promote the study of agricultural economics in educational and training institutions of the country;
• promote agricultural research and assist in the dissemination of its findings in Ethiopia;
• provide fora for the discussion of problems to agricultural development;
• enhance the professional interests of agricultural economists; and
• promote professional contacts among agricultural economists and other professionals in Ethiopia and abroad.

Your Excellency,
Dear Participants,

The choice of theme for this conference was not a one-shot deal. The Executive Committee and other professionals had suggested several themes among which the "International Agricultural Trade Prospects: Agricultural Exports and Commercial Agriculture in Ethiopia" was chosen. This theme was further split into seven sub-themes revolving around world trade agreements and their implications on agricultural exports and commercial agriculture of Ethiopia; cross-border trade in crops and livestock; regional trade prospects among member countries of the Common Market for Eastern and Southern Africa (COMESA) and Intergovernmental Authority on Development (IGAD); major constraints to
the expansion of foreign trade: technological and institutional innovations for promoting agricultural products and services in the export sector; opportunities and comparative advantage of agricultural products of Ethiopia in international trade; and analyses of macro and sectoral policies that have impact on international agricultural trade.

The two days deliberation of this Conference is, therefore, expected to revolve around these sub-themes.

The AESE felt that it was high time until the occasion of the conference to discuss and debate about Ethiopia’s benefit from being a member of the World Trade Organization. Particularly, the Society strongly upholds that the implications of WTO’s Agreement on Agriculture to the agricultural sector of Ethiopia at large and to small-holder farmers, with average land holdings of less than 1 hectare but producing more than 90% of agricultural production and accounting for 95% of the total area under crop, specially, are issues deserving big discussion. Besides, the Society recognized the importance of regional and cross-border trade to the study and analysis of strategy of agricultural economic development of the country and to the study and analysis of policy in relation to the export potential of the country for high value agricultural commodities in the international market.

Today many developing countries have big complaints over the prospects of international trade. These countries have, for example, reported that:

- food insecurity has been aggravated by the collapse of domestic agricultural production due to dumping of cheap food from developed countries;
- discouraging subsidization of farm inputs has led to reduction of fertilizer use in some countries for sharp increase in costs of inputs; and
- global liberalization is eroding the non-reciprocal preferential trade benefits developing countries have been enjoying in the past.

Though the experiences of several developing countries were such threatening, AESE advocates that Ethiopia has to maintain its current policy of market-oriented economic development. At the same time, the Society would like to point out that there are no such things called “free trade” and “purely competitive market”. Trade succeeds when it is supported with well-designed and studied protective actions. Most markets in the world are regulated. In countries like ours, which have predominantly agrarian economy, agricultural support programs must be implemented using market-driven instruments. Our small as well as commercial farmers producing food and export crops must be supported in order to feed this nation and to enhance our export revenues.

The papers to be presented in this conference, I hope, would reflect the need for macro and micro policies and the use of available and additional technologies to boost Ethiopia’s capacity to become food self-sufficient and a competitive partner in the integrated market of the world today. Our boarders must be gates to
collect revenue to the national economy. Our plant and animal resources must be harnessed to the benefit of Ethiopia via growth of price–pushed income.

We must strive to break the vicious circle of underdevelopment to which the increasing poverty is a micro component. Let our effort be to make agriculture productive and based on earnings of a productive farm sector to develop our agribusiness, and then the whole industry. Let the Government Strategy “Agricultural Development Led Industrialization (ADLI)” focus more on our problems of underdevelopment. There is no country which is completely immune of the poverty illness. Poor people exist throughout the world, both in developed and developing countries. No country, even the highly developed ones, managed to eradicate poverty. But many managed to improve the living standard of the mass of the people by breaking the vicious circle of underdevelopment and they became modern high-tech and high standard living nations. Similarly, let our resources be used to reduce the incidence of the deep-rooted poverty and to elevate the nation above the absolute poverty line by making them be both employees and beneficiaries of our economic growth and development.

Our production, distribution, exchange and consumption economic policy should aim at the creation and expansion of the necessary economic and social infrastructure, which will take us to development. Our membership in trade affair of the international community has to be on the premise to reduce poverty.

Your Excellency,
Dear Participants!

In the challenge to achieve development, our country needs many trained citizens including Agricultural Economists, whose role in agrarian economies like that of Ethiopia is tremendous. However, our moves in this regard require some checking. Regardless of the vital roles of these economists, however, at present the Agricultural Economics BSc Degree Program at Alemaya University has been closed. AESE strongly believes that the closure of this Program will have serious impacts on the ADLI Strategy of the government Thus. AESE needs to remind that in an economy which is predominantly agricultural, one of the critical agricultural disciplines we have to nurture is Agricultural Economics.

In Ethiopia, all theory and applied economic courses and related training efforts must be molded to promote the development of its agricultural economy. Accordingly, the demand for Agricultural Economics Education in the ‘production to consumption’ system of the nation has no substitute. Recent studies indicate that Agricultural Economics is the most widely demanded specialty at the B.Sc. level and B.Sc. holders in the field could do most of the development work done by agricultural professionals in Ethiopia.

On these grounds, AESE quests the unknown and unexplained move to cease the undergraduate Agricultural Economics Education in the country as it
advocates the importance and existence of a strong Agricultural Economics Education in Ethiopia. Competition for the provision of Agricultural Economics Education needs to be encouraged with recognition of the linkages among Agricultural Economics and other degree programs of agricultural education such as Animal Science, Plant Science, Agricultural Engineering, and Agricultural Extension.

The society strongly believes and professionally can demonstrate that neither the existing economic programs nor the newly started MSc. degree programs in Agricultural Economics and Agricultural Marketing at Alemaya University can be substitutes for the BSc degree Agricultural Economics Program. Agricultural Economics is an applied economics, not a general one. AESE feels that the public, the private sector, and NGOs have separate demands for B.Sc. degree holders in Agricultural Economics, which cannot be covered by B.A. degree general economics graduates or any second and tertiary degree holders.

Your Excellency,

Dear Participants,

On behalf of the members and executive committee of AESE, I would like to take this opportunity to thank you for your Ministry’s support to the society. In addition to housing us by providing an office in one of your premises, you are our linking person with the higher government offices to raise the issue of the closure of the Agricultural Economics B.Sc. degree program in this country. May I, with due respect, request Your Excellency again to raise this issue with the Prime Minister’s Office and at least make its closure after the public debated on the merits of the decision.

Finally, I would like to thank the USAID/Mission in Ethiopia for its substantial financial support to this conference. This conference has also benefited from the support of Ethiopia’s Export Promotion Agency and the Golden-Rose Agro-Farm at Teffki. In general, the society recognizes and appreciates the kind supports of many other institutions both public and private.

Your Excellency, may I take now the opportunity to invite you to give us your advice and opening speech.

Thank you.
Distinguished Guests,
Members of Agricultural Economics Society of Ethiopia.
Conference Participants.
Ladies and Gentlemen!

First of all, I would like to express my great pleasure in having been invited to deliver an opening remark in this 5th Annual Conference of the Agricultural Economics Society of Ethiopia (AESE). I am specially delighted to see such a large gathering of prominent Agricultural Economists and specialists in related fields playing key roles at public and private institutions in Federal as well as Regional States of Ethiopia.

The leading theme you chose for this Conference, i.e. "International Agricultural Trade Prospects: Agricultural Exports and Commercial Agriculture in Ethiopia" has significant importance not only to agriculture and rural development but also to the overall economic development of the country. It is in line with one of the main thrusts in the national development strategy, which the current government would like to get engaged more than ever before during the coming years.

The issues of international trade, agricultural commodity exports and commercial agriculture have figured prominently in public debates in many countries. Particularly in recent years, these issues have got great attention in countries of Sub-Saharan Africa including Ethiopia as an increasing number of countries adopted market liberalization as part of the wider structural adjustment programs. Obviously, there are strong proponents of liberalization of trade and open market economy on one side of the scale and critics who site the constrained global economic environment and market failures facing the economic structural setup of these developing countries on the other.

Countries like Ethiopia, which are primarily agrarian, where integrated private marketing system is at rudimentary stage, and which are facing chronic institutional and infrastructure weaknesses, need to focus on the role of the public sector in promoting the development of competitiveness in the international market. They should also look into their niche in multilateral and bilateral arrangements such as the World Trade Agreements and Regional Trade Agreements, development of entrepreneurial skills of the private sector in
diversified agricultural exports for their commodities and services, and the development of large, medium and small-scale commercial agriculture.

Since 1993/94, Ethiopia has adopted and has been implementing the strategy known as "Agricultural Development Led Industrialization (ADLI)", which puts the agricultural sector at the forefront of the country’s economic development. The agricultural sector is expected to shoulder the multifaceted tasks of:

- assuring the food supply needs of the over 60 million people;
- producing intermediate inputs and raw materials for the industrial sector;
- creating employment opportunities for rapidly increasing rural residents;
- generating foreign exchange through increased exports of agricultural products; and
- supplying revenue and surplus for further development of agricultural, industrial and services sectors.

As part of the ADLI strategy, the new extension package program was designed to boost agricultural growth and farmers’ welfare through the application of biological, chemical and mechanical technologies and improved cultural practices. The program has significantly increased production of both cash and staple food crops, particularly in regions with reliable rainfall.

The recurrence of drought within short intervals resulting in subsequent crop failures has created food shortages in some parts of the country, particularly in the lowland pastoralist areas and in the North where the land is highly degraded. This situation has become a major challenge to all of us, and all eyes are focusing towards means of circumventing the problem in the future. However, in areas where the extension package program has a foothold and the components of the package are deepening, major shift is taking place in mode of production, gradually moving away from practicing subsistence agriculture and adopting commercial and diversified agriculture. Thus, the next phase of ADLI Strategy calls for concerted efforts in the development of organized and integrated marketing institutions (e.g. banking and credit, transportation, storage, packaging, quality standards and grades, legal setup and regulations, etc.). It also demands joint ventures in the development of processing and transformation of agricultural products that meet consumers' demand, and are in earnest search for diversified external and domestic market outlets.

Thus, the theme of this conference is timely and appropriate in that the three dimensions of commercialization, i.e. production, export market outlet and international trade environment are inter-linked, and I believe you would discuss thoroughly the various ramifications of the issues and discern the key elements involved in World Trade Agricultural Exports and Commercial Agriculture. Needless to say, the country has great potential and comparative advantage in the production of agricultural commodities particularly for the production of non-traditional export products such as tropical and temperate fruits and horticultural
products, floriculture and apiculture in addition to the traditional export commodities, which deserve special attention at conferences like this one. I believe that you will focus on relevant areas worth considering during your deliberations and we are earnestly looking forward to your valuable suggestions and recommendations in formulating the national policies and strategies along this line.

Finally, Ladies and Gentlemen. I appreciate the concern of the members of the Society and what they have done recently towards sensitizing the public about the closure of the Agricultural Economics B.Sc. degree program in the country. Now, I can only promise that I will bring the matter to the attention of concerned authorities to reassess the importance of this program during revision of the tertiary level education system as a whole.

Wishing you all a successful deliberation. I now declare the Fifth Annual Conference of Agricultural Economics Society of Ethiopia officially open.

Thank you.
THE PLACE OF AGRICULTURE
IN WORLD TRADE

Dejene Aredo and Abdurahman Ame

Introduction

Agricultural exports are important to the economies of many developing countries. For example, in Ethiopia agriculture accounts for about 90% of merchandise exports and 50% of the GDP, and employs more than 80% of the total labor force. Despite this fact, barriers to agricultural trade are high among products traded by both developed and developing countries. Agricultural exports of developing countries face tariff and non-tariff barriers. As a result, world trade in agricultural commodities has grown slower than general trade. This has constrained agricultural growth and diversification in the developing world.

Over the past 15 years, developing countries had significantly reduced their policy barriers to agricultural development. But agricultural policy reforms of the developed countries and the last round of the GATT negotiations made only a very modest start in dismantling barriers to agricultural trade. A key question here is whether these barriers to international trade in agricultural products are reduced. The purpose of this paper was, therefore, to review the institutional context of and trends in world trade in agricultural commodities. It dealt with the problem of disciplining world trade in agricultural commodities.

The Uruguay Round Negotiations and Agriculture: An Overview

Although agriculture is an important segment of their economies, many developing countries are net importers of food. International trade in agriculture had remained outside the jurisdiction of GATT until 1982, when the Committee on Trade and Agriculture (CTA) was set up to deal with the issues pertaining to

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This section was drawn partly from Valdes (1987); Rayner and Colman (1993); and Dejene (2000)
the incorporation of agriculture into GATT negotiations. Until then, domestic policy objectives and priorities of detribalized countries had made agriculture an exception and left it out of the application of any GATT disciplines. Both the USA and the EU wanted to support their farmers and subsidized their agricultural exports.

Agricultural policies of the EU and the US have denied developing countries access to markets for some of their exports. For example, cane sugar faces competition not only from beet-sugar (produced under high domestic production and support from Europe and North America), but also from sugar substitutes (artificial sweeteners and corn syrup). Export to USA has been restricted through sugar quota and Europe has emerged as a major sugar exporter (through subsidized dumping of domestic beet sugar). The losers have been low-cost cane sugar producers.

The Uruguay Round Negotiations launched in 1986 was the eighth in the series and the most ambitious and complex of all multilateral trade negotiations conducted under the auspices of GATT. There were 105 contraction parties involved in 15 negotiating groups. The Uruguay Round negotiators were not restricted to traditional issues such as tariff liberalization. They also sought to extend GATT disciplines to the new areas of services, intellectual property and investment measures. In addition, a high priority was given to reforming trade sectors such as textiles but especially agriculture, which had previously been subjected to waivers from normal GATT rules and disciplines.

Previous rounds in the GATT had fostered a process of trade liberalization in industrial products but had been unable to reduce agricultural trade barriers and distortions. In the absence of effective international rules and disciplines, domestic policies of industrialized countries have led to increased distortions in world agricultural trade of the period—leading to the launching of the Uruguay Round Negotiations.

Policy interdependence between countries was linked by trade results in 'policy offsets'. Since protectionism by large countries lowers international prices, a fraction of farm support in one country is used to offset the impact of support in other countries (Ingersent et al. 1994). Developed countries give significantly greater protection to agriculture than to manufacturing. While the degree of protection tends to rise and fall with world market prices, domestic food prices in the EU and Japan are often twice as high as international prices. On the contrary, in developing countries, agriculture is taxed, while manufacturing is usually protected from import competition.

Many developing countries were accused of adopting import substitution strategies. Agriculture has often been neglected because industrialization is explicitly or implicitly favored. But, in many African countries, agriculture had been heavily subsidized until the adjustment policies of the 1980s were enacted.
In Ethiopia, for example, farm inputs and credit were subsidized, although output prices were controlled.

Trade in temperate products has remained a problem since the beginning of multilateral trade negotiations several decades ago. Exporters of temperate and sub-tropical products face several restrictions on market access to OECD countries. In addition to production and export subsidies of OECD, there are protections (tariffs), escalation of tariffs as the level of processing increases, development of substitutes, etc. Here we should note that some products like sugar, rice and livestock are produced both in temperate and tropical regions. Much of the trade in the temperate and sub-tropical main agricultural products is beyond the rule of GATT. The US (during GATT negotiations), EU and Japan have insisted that domestic measures of farm policy should not be subject to international limitations and scrutiny. Exemptions have been frequently sought from the GATT disciplines such as the waiver granted to the US in 1954 and the tacit acceptance of the Common Agricultural Policy (CAP) of the EU. On the other hand, many tropical products and raw materials face relatively low levels of protection in OECD countries though there could be opportunities in these commodities for export promotion.

Agricultural subsidies in industrialized countries substantially increased in 1980s. For example, farm support in the USA increased from $ 2.7 billion in 1980 to $ 25.8 billion in 1986. EU taxpayers spent around $21.5 billion on farm support in 1986—much more than the $6.2 billion around 1976 (Valdes. 1987).

The domestic farm policies of industrialized countries have widespread effects on the economies of developing countries due to the following facts.

- Cereal imports by developing countries are the principal growth area in world agricultural trade.
- More than 65% of the agricultural export revenues of developing countries come from exports to the wealthier OECD countries.
- The growth rate of many developing countries is a function of their export earnings, most of which is from agriculture (e.g. Ethiopian agriculture accounts for 90% of exports).
- In some cases, industrialized countries dump their products in developing countries.

Farm policies of industrialized countries may depress world prices (and thus export revenues of developing countries) and induce great instability in world prices.

Trade restrictions imposed by developed countries include tariffs and non-tariff barriers, and they vary considerably in severity among countries and products. They all tend to lower world prices by artificially reducing domestic consumption (e.g. sugar consumption in USA) and raising domestic production. As a consequence, the volume of exports from non-subsidizing countries is
reduced. Price and volume effects together translate into loss of foreign exchange by developing countries that export agricultural products. However, some developing counties benefit from trade restrictions on cereals in developed countries as protection has led to lower world prices of their cereal imports.

According to Merbis and Tims (1997), the Uruguay Round Negotiations has resulted in the following provisions regarding agriculture.

- The key element of WTO is the principle of tariffication.
- Contracting parties are held to convert non-tariff barriers (NTBs)\(^4\) into tariffs.
- Renewing or reintroducing NTBs is not allowed.
- After tariffication, reduction of tariff levels should take place.
- Developed countries must reduce tariffs by 36% over six years, and developing countries by 24% over ten years.
- Least developed countries are totally exempted from reduction commitments, but they do not have to bind (declaring maximum tariff rates) their tariffs.
- Exports of tropical products are excluded from the WTQ agreement.

Several provisions in the agreement prevent a country from being flooded with cheap imports. Special safeguard guarantees are allowed. Developing countries enjoy many exemptions such as government support programs to enhance agricultural growth and rural development. Accordingly, they are allowed to provide input subsidies, investment subsidies and other subsidies to eliminate narcotic crops. Moreover, some developing countries are allowed preferential treatment under Lome Conventions (for details, see Merbis and Tims, 1997).

The WTO also provides the so-called, “Green Box Policies”. That is, support to producers must satisfy certain requirements to qualify for government support. Price intervention, to producers of agricultural products, does not qualify as a Green Box Policy. A support must be a transfer from government, not one from consumers and must have no effects on production or trade. Examples of supports provided under the Green Box Policy include: support for disease control, training extension, marketing and promotion advice, domestic food aid, payment under environmental programs, etc. Achievements of the Uruguay Round Negotiations for agriculture can be summarized as follows:

- tariffication (all agricultural products are bound by the end of the implementation period);
- reduction of tariffs;
- reduction in export subsidies and domestic support for farmers;

\(^4\)NTBs comprise quantitative import restrictions, variable import levies, minimum import prices, import licensing, state trading and voluntary export restrictions.
The place of agriculture in world trade

- special and differential treatment for developing countries; and
- minimum market opening criteria ranging from 3 to 5% of the domestic market.

The Uruguay Round agreement can only be understood in light of the EU-US negotiations and of threats of all-out trade war. Most developing countries, except the Cairns Group, were not very vocal in the Uruguay Round Negotiations. The EU and US entertained conflicting demands. The EU wanted, first of all, to eliminate the US export subsidies, while the US (also Japan) wanted to keep their high-level protection and invoked defensive strategies. In the end, the Uruguay Round Negotiations failed to bring about overall reduction of border protection, or major improvement of market access. On the positive side, the tariffication of agricultural products can be mentioned. Most tariffs are bound, and agricultural export subsidies are reduced. Eventually, these measures could make world trade in agricultural commodities less distorting. However, much depends on the policy response of the EU and USA when WTO commitments become binding.

The WTO Agreement on Agriculture and Main Provisions of the Agreement

Main disciplines were contained in the Agreement on Agriculture. This Agreement has a special feature as it overrides the provisions of GATT 1994 and those of other WTO Agreements like Article 21. If there is a conflict between the provisions of this Agreement and any provision of GATT 1994 or another WTO Agreement, the provisions of this Agreement will be applicable.

The Agreement covers the products in the Harmonized System of Classification, Chapters 1 to 24, except fish and fishery products and few items in some other chapters. Fish and fishery products are covered by the disciplines contained in GATT 1994 and other WTO agreements, as applicable to the non-agricultural products.

The Agreement covers three areas: market access, domestic support, i.e., the subsidy given for production, and export subsidy. In these areas, the commitments of members are contained in their respective schedules, which are an integral part of the WTO legal system. Hence, to know what the commitments of the members

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5 This section was summarized from United Nations Conference on Trade and Development (1999), Future Multilateral Trade Negotiations: Handbook for Trade Negotiations from least developed countries.
are, one has to consult these schedules: merely reading the Agreement does not give this information.

**Creation of tariffication and tariff reduction**

These were created for market accessibility. Earlier restrictions on market access were in the form of tariffs and certain non-tariff measures like quantitative restrictions, variable import levies, minimum import prices, discretionary import licensing, state trading voluntary export restraints and other similar border measures. Members were required to remove all these non-tariff measures and replace them by their tariff equivalents. These additional tariff levels were to be added to the ordinary tariff—resulting in total tariffs on different agricultural products. This is called the "tariffication" of the non-tariff measures.

The tariff arrived at after tariffication for products to which non-tariff measures had been applied, and the tariffs applicable to other agricultural products, were to be reduced by certain specified percentages over the implementation period. These are to be the final levels of tariffs at the end of the implementation period. This reduction was required to take place uniformly over the implementation period. In this manner, the tariffs would be reduced successively from year to year during this period. The modalities required that a developed country would reduce the tariff by 36% until the end of the year 2000 and a developing country by 24% until the end of 2004. The least developed countries were, however, not required to make any reductions in their tariffs, even though they were required to bind them.

Tariffication excluded import control measures taken in pursuance of some specific provisions of GATT. For example, the measures taken by developing countries for balance-of-payment (BOP) reasons in accordance with Article XVIIIB of GATT 1994 and the measures taken by members in pursuance of general exceptions, as contained in Article XX of GATT 1994, were not subjected to tariffication. The implication is that once a member of a developing country ceases to have the protection of the BOP provisions, it cannot resort to such import control measures in agriculture, except through the procedure of safeguard action.

**Domestic support**

The modalities agreed during the negotiations provided the quantification of the domestic support and its reduction over the implementation period. The quantification was done through aggregate measurements of support (AMS). The
AMS for different products, and also products that are of a general nature and thus not related to any specific product, were added to get the total AMS. The level of the total AMS which forms the basis for reduction is called the base total AMS and was calculated on the basis of the figures for 1986-1988.

The modalities required developed countries to reduce the base total AMS by 20% over their implementation period (until the end of the year 2000), and developing countries are required to do so by 13.3% until the end of 2004.

The reduced level for a particular year in the implementation period is called the annual bound commitment level of the total AMS for that year. In order to examine whether or not a member has fulfilled its commitment of reduction of the domestic support, the annual bound commitment level is compared with the actual level of the support in that particular year, which is called the current total AMS for that year.

It is worth noting that the commitment is on the reduction of the total AMS; thus a member has flexibility to choose the type of measures and the products to be covered by the particular measures within the overall ceiling of the annual bound commitment level of the total AMS for that particular year. The members have calculated their base levels and annual levels and included them in their schedules. The LDCs do not have to undertake any commitment for the reduction of their domestic support.

The support measures exempted from inclusion in the calculation of AMS and thus from reduction commitment are recorded at two places in the Agreement, viz., in Article 6.

Export subsidy

Regarding export subsidy, the discipline on reduction is on two parameters: the annual budgetary outlay and the quantity of export covered by the export subsidy. The modalities prescribed that the base for the calculation of reduction in these cases would be the figures for 1986-1990. The requirement of reduction in developed countries over the period of implementation would be 36% for the budgetary outlay and 21% for the quantity of export covered by the export subsidy. These percentages are 24 and 14, respectively for developing countries over their period of implementation. The reduction in the levels of subsidy would be spread uniformly from year to year during the implementation period. Member countries have calculated their base levels and included them in their schedules.

The export subsidies which are to be included in the base figures to be used for reductions are: subsidies contingent on export performance; sale or export of products by governments at prices lower than those of the like products in the domestic market; payments on the export of products financed by governments either through public account or through a levy on the product subsidies to reduce...
the cost of marketing including handling, upgrading, processing and international 
transport and freight; and provision of internal transport and subsidies contingent 
on the incorporation of the product into exported products.

About 24 countries (the European Union counting as one) gave commitments 
to reduce export subsidies. Of these countries five are developing ones. All these 
countries are under an obligation not to exceed the commitment levels shown in 
their schedules in respect of both budgetary outlays and volumes. Countries that 
have not given commitments are prohibited from using export subsidies on 
aricultural products in respect of both budgetary outlays and volumes. However, 
the provisions on differential treatment permit developing and least developed 
countries to use two types of subsidies: subsidies to reduce the cost of marketing 
exports of agricultural products (including handling, upgrading and processing), 
and subsidies on internal transport and freight charges on export shipments on 
terms more favorable than domestic producers.

Special provisions for developing countries

There is no obligation on the LDCs to reduce tariffs and domestic support. The 
LDCs were, however, required to bind tariffs applicable to agricultural products: 
in most cases, they have bound them at levels which are higher than the applied rates.

The implementation period for the reduction commitment for developing 
countries is from 1995 to 2004, whereas for the developed countries it was 1995 
to 2000. Thus, developing countries have a longer time to bring about the 
prescribed reduction, which means that the reduction per year during the 
implementation period is low compared to that for developed countries.

Experience of implementation

The developed countries have kept their tariffs very high in respect of several 
aricultural products as they have determined very high tariff equivalents of their 
non- tariff import restraints. Some countries have kept their tariff levels between 
300 and 400 % in respect of some products, e.g., in Japan, 352.7% for wheat, 
388.1% for wheat products and 361% for barley product, and in Canada 360% for 
butter. Some countries have kept their tariffs between 200 and 300% for some 
products, e.g., 244.4% for sugar in the United States, 213% for beef in the EU and 
289% for cheese and 236.3% for eggs in Canada. These are clearly prohibitive 
tariffs, making any import almost impossible.
Net food-importing countries

There is recognition of the problems of the LDCs and the net food-importing countries regarding additional burdens on them caused by agricultural liberalization. However, no specific action has been taken to provide relief to countries that were adversely affected as a result of the increase in prices. Consequently, these countries have remained with their problems.

Tariff quotas

It has been mentioned in the tarification section that member countries have provided special market access through tariff quotas, but in several cases these quotas are country-specific, not global. The members in general cannot take advantage of the country-specific tariff quotas.

Uncertainty of domestic support

A member country has the flexibility to choose the products as well as the types and rates of domestic support within the overall limits of the amount of annual domestic support. Thus, exporting countries are not sure which products and which types and rates of support a particular member would use in a particular year. This creates an uncertainty about their export prospects.

Built-in agenda in agriculture

The Agreement mentions that negotiation was to commence at the beginning of 2000 for further reduction of protection and subsidies. Since general non-tariff measures were already converted to tariffs, the negotiation on reduction of protection was to be focused on reduction of tariffs, and the reduction in the domestic support and export subsidies was to be covered by the negotiations.

As the tariff on several products, domestic support, and export subsidies is still very high in developed countries, developing countries including the LDCs need to press for a high degree of reduction in these levels in developed countries. Further, it will also be important for them to request some flexibility for themselves regarding the use of import control, domestic support and export subsidy in this area.
Status of Agricultural Commodities in World Trade

Growth of agricultural trade lags behind that of merchandise trade for agriculture has lost relative importance in world trade. Accordingly, the share of developing countries in world agricultural exports decreased from 39.8% in 1961 to 26.8% in 1990 (Table 1).

<table>
<thead>
<tr>
<th>Region Group</th>
<th>Share (% of USS) in different years</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>47.1</td>
</tr>
<tr>
<td>South, East &amp; West</td>
<td>8.6</td>
</tr>
<tr>
<td>North Africa &amp; Middle East</td>
<td>3.6</td>
</tr>
<tr>
<td>East Asian and Pacific</td>
<td>9.1</td>
</tr>
<tr>
<td>South Asia</td>
<td>4.0</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>14.6</td>
</tr>
<tr>
<td>LDC Total</td>
<td>39.8</td>
</tr>
<tr>
<td>World</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Binswager and Lutz, 2000

The share of developing countries increased to 29.7% in 1996 due to temporarily higher commodity prices. Of all the major regions of developing countries, only East Asia and the Pacific increased their shares. The loss of Africa was particularly striking, decreasing from 8.6% in 1961 to 3% in 1996. The slower growth of agricultural trade was partly due to policies that limited export opportunities in important commodities such as grains and sugar, and partly due to falling prices of agricultural exports relative to manufacturing prices.

Unlike aggregate values, agricultural trade within regional trading blocks has been increasing more rapidly. Very high tariffs on agricultural products led to greater trade diversion within the free trade zones. World Bank report on trade blocks shows that developing countries are likely to benefit most when they enter regional agreements with high-income countries. This has been the case for countries that have become members of the EU or NAFTA (Portugal and Mexico).

Nature of agricultural trade

A common way of classifying agricultural commodities is by location of production: i.e., tropical, temperate, etc. In this paper, a slightly modified version
of these criteria was used in three groups: tropical, temperate and high-valued. Tropical commodities are products such as coffee, cocoa, coconuts, palm oil, rubber, sugar cane, and tea. Temperate commodities are cotton, maize, grains, soybeans, and sugar beets. These categories conform to a north-south view of the world, because most developing countries have typically exported tropical commodities while developed countries have exported temperate commodities. Tropical and temperate commodities have historically dominated agricultural trade, however, a new group of commodities has increased in importance in recent decades. These are the high-valued commodities such as fruits, vegetables, meat, and flowers. These commodities were more widely traded in the last twenty years as shipping technology improved, transportation costs declined, airfreight became more widely available, and consumer demand for these commodities increased. It is now economical, for example, to import cut flowers, fresh fruits, or vegetables into Europe, Japan or the US during the winter months.

This location-based classification also partially corresponds to the degree of protection given to these commodities. Most temperate products are highly protected in world markets, while the protection levels on tropical products are much lower. Similarly, the protection on high-value products is insignificant. However, there are some products like sugar, which is highly protected; and cotton, which is less protected.

Trade in traditional tropical and temperate commodities has slowed in the last two decades while trade of high-valued commodities has grown rapidly. Fruits and vegetables now form the largest category of agricultural trade, with annual growth rate of 5.44% from 1980 to 1998. In contrast, the trade value of world cereals grew by 1.42% per year, and trade values of crude materials (such as rubber) grew by 1.99% from 1980 to 1998. Other high-valued commodities such as meats and preparations grew by 4.01%, and specific types of meat such as chicken grew by 8.5%. Exports of cut flowers, which are not classified as agricultural trade, grew by 6.6% per year from 1980 to 1998, but growth has slowed during the 1990s (World Bank, 2000).

The performance of developing countries in the specific commodities is mixed. The most interesting result is that developing countries have significantly increased their shares of temperate and high-valued products, although they have lost shares in the trade of tropical products.

Africa has lost market shares both within developed and developing countries. Its share, excluding that of North Africa, has declined from 8.6% in 1961 to less than 3% in 1996 (Table 1). Share of the developing countries in the most rapidly growing segment of the market fruits and vegetables has remained about constant over the past thirty years, but declined from the peak of the mid-1980s.

The main causes of the decline in the shares of Africa were against the main causes of the share declines of other developing countries, which face the same international environment as Africa. Furthermore, the biggest losses have taken
place in traditional exports of Africa, especially in tropical beverages (coffee, cocoa and tea), and it was more to the East African producers. Their share in tropical products declined from more than 25% in the 1970s to almost 15% in the 1990s. This indicates the total market decline. Similar losses of market share were evident in other agricultural products as well. The only semi-positive part was that, since 1980s, the decline in market shares in temperate and high-value crops has been relatively small.

The performance of non-traditional exports in eight African countries during 1994-98 suggests some encouraging patterns (Table 2). First, in most cases, the range of the new exports is very wide. It includes processed primary products, a few new agricultural exports, manufactures, and in Uganda, gold. Second, though starting from small bases, growth of non-traditional exports has been rapid in most of the eight countries considered here. Even with gold exports excluded, non-traditional exports from Uganda grew by more than 70% a year, accounting for 22% of the country’s exports by 1998. Non-traditional exports from Ghana, Madagascar, and Mozambique had also shown impressive growth. In Ghana and Mozambique, non-traditional exports now account for nearly one-fifth of their exports. Most importantly, the growth in Ghana was mainly achieved by exports of processed and semi-processed products. In Madagascar, the share of non-traditional exports soared to 80%. Cote d’Ivoire, Zambia, and to a lesser extent, Senegal had also considerable export diversification notably in product lines related to their natural resource bases (World Bank, 2000).

Table 2. Average annual growth rates of non-traditional exports and their shares from total country exports from selected African countries, 1994-98

<table>
<thead>
<tr>
<th>Country and exports</th>
<th>Share from total country exports (%)</th>
<th>Growth (% of US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cote d’Ivoire</td>
<td>13.5</td>
<td>16.4</td>
</tr>
<tr>
<td>Cote d’Ivoire excluding processed coca. coffee</td>
<td>6.9</td>
<td>16.2</td>
</tr>
<tr>
<td>Ghana</td>
<td>9.7</td>
<td>35.5</td>
</tr>
<tr>
<td>Ghana, processed and semi-processed</td>
<td>6.3</td>
<td>42.1</td>
</tr>
<tr>
<td>Madagascar</td>
<td>64.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Madagascar export processing zone</td>
<td>14.3</td>
<td>32.2</td>
</tr>
<tr>
<td>Mauritius</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mauritius export processing zone</td>
<td>67.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Mozambique</td>
<td>5.6</td>
<td>50.3</td>
</tr>
<tr>
<td>Mozambique excluding processed cashews</td>
<td>3.5</td>
<td>47.1</td>
</tr>
<tr>
<td>Senegal</td>
<td>11.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Uganda</td>
<td>5.6</td>
<td>101.5</td>
</tr>
<tr>
<td>Uganda excluding gold</td>
<td>5.6</td>
<td>72.2</td>
</tr>
<tr>
<td>Zambia (nominated exports)</td>
<td>14.7</td>
<td>16.5</td>
</tr>
</tbody>
</table>

Source: World Bank, 2000

OECD agricultural protection still harms developing countries. The farm policies of OECD countries even after the reforms under the Uruguay Rounds have bussed
annual welfare losses amounting to 11.6 billion Dollars for developing countries (Binswager and Lutz, 2000). The real income gains to households in poor countries from OECD agricultural policy reform are thus sizable. The net gains would range from annual per capita income by $1 in South Asia, $4 in Southeast Asia, $6 in sub-Saharan Africa, and $30 in Latin America (Ibid.). The average producer household in developing regions would gain from liberalization, while consumer households with a food deficit would lose. But the gains for producers would be larger than the losses for consumers and would have dynamic multiplier effects for rural areas and developing economies as a whole.

Welfare in OECD countries would increase as these countries are incurring $63 billion a year in welfare losses from their distorting policies (Binswager and Lutz, 2000). The main losers are consumers who pay higher prices for such commodities as milk, sugar, and bananas. The main gainers are favored producers, who would likely be strongly opposed to the needed liberalization.

Conclusions

The globalization process has put in place a regulatory framework that inherently militates against the interests of most developing countries. Developed countries have initiated the Uruguay Round Negotiations that culminated in the WTO agreements of 1994.

The regulatory framework of world trade in agriculture has certain interesting features. International trade in agriculture has remained outside the jurisdiction of GATT negotiations of the mid 1980s. This was because industrial countries were not willing to liberalize trade in agricultural commodities. They erected trade barriers to keep away exports of developing countries. Moreover, industrial countries provided heavy subsidies for domestic agriculture in response to lobbies of extremely strong farmers. Unfortunately, these countries pressurize developing countries not to subsidize agriculture. One may wonder why those who subsidize rich farmers demand poor countries not to subsidize low productivity agriculture.

For many developing countries, the pace of economic growth depends on the rate of growth of agricultural export revenue. But, efforts of export promotion of these countries are restricted by agricultural policies of industrialized countries. These policies distort world markets and induce greater price instability. Moreover, increased domestic prices of food in these industrialized countries have resulted in welfare loss of consumers.

Agriculture has been included in the Uruguay negotiations and in the WTO disciplines. However, this sector has never been fully liberalized. Developing countries are still dissatisfied with the way agriculture is treated by WTO.
Moreover, the implementation of WTO agreements is likely to encounter strong resistance from activists from the North and from governments of developing countries as well.

In Ethiopia, researchers had neglected the international dimension of agriculture. As a result, a number of questions have remained unanswered. For example, nobody has quantified the net gain or loss Ethiopia could receive by joining the WTO. Obviously, further research is required in this vital but neglected area.

References

Introduction

African countries have come to realize that their economic development lies in strengthened regional cooperation and integration. The fragmented and weak national economies are not conducive to the rapid development of trade and industry in the continent. In the context of the present globalization and liberalization of markets, Africa should consolidate into a large cohesive market to become internationally competitive and to meet the challenges of globalization. It is in this context that both the Common Market for Eastern and Southern Africa (COMESA) and the Intergovernmental Authority on Development (IGAD) exist to provide a framework for integrating the economies of their member countries and for promoting and stimulating trade among themselves. The increase in trade is expected to improve, among other things, the welfare of their citizens and to bring a sustainable development to the subregions and their member countries.

The purpose of this paper was therefore to discuss the COMESA and IGAD arrangements in the context of the promotion of integration and expansion of intra-subregional trade. The underlying goal of both organizations is to gradually establish an economic community in their respective subregions in line with the goals of the Abuja Treaty on Establishing the African Economic Community, which came into force on 17 May 1994. Indeed, as the building blocks of the African economic integration, COMESA and IGAD, Regional Economic Communities (RECs) as we commonly call them, are pursuing a step by step objective to achieve a Free Trade Area (e.g. COMESA by the year 2000), a Customs Union (COMESA by the year 2004) and ultimately a Monetary and Economic Union (COMESA between 2004 and 2025). These objectives are to be met through:

- trade liberalization schemes for goods and services;
- arrangements for the free movement of labor and capital investments;
- monetary and fiscal liberalization and convergence; and
- cooperation in various sectors, including industry, agriculture, transport, communications, energy, health, environment and tourism.
The paper focused on the COMESA arrangements for the following three reasons. First, all IGAD countries are also members of COMESA; second, COMESA has an extensive experience (dating from the time of the Preferential Trade Area (PTA) established in 1981) in integration activities particularly in market integration and investments, and third, IGAD, as a successor organization to the previous Intergovernmental Authority on Drought and Development (IGADD), is only young that it has not yet developed detailed plans on integration including free trade arrangements, customs unions, etc.

In this connection, this paper indicated the expected impact of these free trade arrangements on intra-subregional trade and the prospects for member countries. Free access to markets should theoretically lead to tariff-free intra-country trade and to better trade prospects for member countries. In the African context, however, an effective free trade area will depend on the capacity of member states to export or import from the subregional market. The current trade patterns and directions in Africa are predominantly in favor of the traditional trading partners of Europe and other developed countries. Furthermore, African countries have similar production structures mainly geared to exports of primary commodities in which the prospects for intra-regional trade are generally limited. They are also faced with structural weaknesses limiting the capacity to produce and export a wide range of manufactures. However, the potential of the free trade area to help at least expand the limited export base of the countries cannot be underestimated. In this regard, there is a need to intensify the research and analysis for trade and export potentials within the subregion.

A successful free trade area has also to do with the intensification of measures and resources to exploit the natural resource endowments of the subregional partners in a complementary manner. Countries in Eastern and Southern Africa have enormous endowments and potentials in energy, agricultural and industrial development, mineral wealth, oil and natural gas reserves, forestry, and marine and fresh water resources. These have important implications for the development of agro-industries, manufacturing of animal feed, processing of meat and milk, and the production of various agricultural staples. Projects and feasibility studies are available to exploit such subregional potentials and build the requisite infrastructure and productive capacities. But the projects and studies did not materialize fully for resource constraints.
Objectives and Programs of COMESA and IGAD

Objectives

COMESA was established in 1994 in replacement of PTA for Eastern and Southern African States, which had existed as of 1981. The current members of COMESA are Angola, Burundi, Comoros, Congo Democratic Republic, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

The IGAD was launched in 1996. It replaced the IGADD that was established in 1986 by the then drought-affected six Eastern African countries, namely Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda. Eritrea became the seventh IGADD member in 1993. IGADD’s priority areas were food security attainment, environmental protection and desertification control, whereas the mandate of the revitalized IGAD was expanded to include socio-economic development and political and humanitarian affairs as well.

The overriding objective of both RECs is to promote social and economic cooperation; peace, security and stability to enable their member countries attain sustainable development individually and collectively as a regional bloc. Their vision is to establish a fully integrated and internationally competitive regional economic space within which goods, services, capital and labor can move freely across national borders. Accordingly, both envisage achieving increased cooperation and integration in all fields of development—particularly in trade, customs, finance, transport, communications, information science and information technology, industry, energy, agriculture, environment and natural resources, and gender too.

Programs

IGAD

Because of its limited capacity and considering the pressing needs of its members, IGAD has identified the following three priority areas.

Food security and environmental protection: this was stipulated to ensure food self-sufficiency and preserve the natural resource base and the environment. The priority projects identified in this regard are:

- establishment of a Regional Integrated Information System (RIIS);
- strengthening library and documentation services of member states in remote sensing services;
- training and credit in artisanal fisheries;
- implementation of the international convention to combat desertification;
- promotion of sustainable production of drought tolerant, high yielding crop varieties through research and extension program;
- trans-boundary livestock disease control and vaccine production;
- promotion of environmental education and training;
- strengthening controls to environmental pollution;
- building capacity in integrated water resources management;
- promotion of community-based land husbandry; and
- training in grain marketing.

**Conflict prevention, management, resolution, and humanitarian affairs:** Intended to collectively preserve peace, security and stability, which are a prerequisite for economic development. Two projects are to be pursued in the medium-term. These are capacity building programs in the area of conflict prevention, and alleviation of humanitarian crisis.

**Infrastructure development:** focuses on the coordination and harmonization of policies in trade, industry, tourism, transport and communications. It emphasizes more on:
- removal of physical and non-physical barriers to interstate trade, transport and communication;
- construction of missing links on the Trans-African Highway and the Pan-African Telecommunications Network (PANAFTEL);
- improvement of ports and inland container terminals;
- modernization of railway services.

**COMESA**
COMESA aims to achieve regional cooperation and integration by developing trade and promoting investment among its members. Accordingly, it is implementing many programs in trade liberalization and facilitation, fiscal and financial integration and other related activities. The following trade-related programs of COMESA for integration are more advanced than those of IGAD.

**Trade liberalization**

**Reduction and eventual elimination of tariffs:** COMESA launched a Free Trade Area (FTA) in October 2000. The level of a Customs Union (CU) is to be reached by the year 2004. COMESA member countries had agreed to achieve the FTA by gradually reducing tariffs on intra-regional trade as follows: October 1993 60%;
October 1994 60%: October 1996 80%: October 1998 90%: and October 2000 100%. Member countries have formulated different rates tariff reduction (Table 1).

Table 1. Tariff reduction rates of COMESA member states for intra-COMESA trade, as of 31 October 2000

<table>
<thead>
<tr>
<th>Country</th>
<th>Tariff reduction on the national tariff rate (%)</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Djibouti</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Egypt</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Kenya</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Madagascar</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Malawi</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Mauritius</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Sudan</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Zambia</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>100</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Comoros</td>
<td>80</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Eritrea</td>
<td>80</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Uganda</td>
<td>80</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Burundi</td>
<td>60</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Rwanda</td>
<td>60</td>
<td>Agreed to reduce 100% by 31 October 2000</td>
</tr>
<tr>
<td>Namibia</td>
<td>Derogation (SACU)</td>
<td>Agreed to 100% reduction by July 2000</td>
</tr>
<tr>
<td>Swaziland</td>
<td>Derogation (SACU)</td>
<td>Agreed to 100% reduction by July 2000</td>
</tr>
<tr>
<td>D.R. of Congo</td>
<td>Derogation (war)</td>
<td>Agreed to 100% reduction by 2000</td>
</tr>
<tr>
<td>Seychelles</td>
<td>Derogation (reform)</td>
<td>Agreed to reduce 90% by 1999</td>
</tr>
<tr>
<td>Angola</td>
<td>Derogation (war)</td>
<td>10% reduction is applicable. 100% reduction after completion of study underway.</td>
</tr>
</tbody>
</table>

Source: BBC and COMESA documents

According to a COMESA Secretariat Report, the effect of tariff reductions on intra-COMESA trade is positive. In 1992, total intra-COMESA trade was estimated at US$ 1.8 billion, trade with third world countries at US$ 40.5 billion and total COMESA trade (intra + extra-COMESA trade) at US$ 42.3 billion. For the period 1992-97, intra-COMESA trade grew by an average rate of 13.6% annually while COMESA trade with third world countries grew by an average rate of 6.1% and total COMESA trade grew by 6.5% on average. In 1997 and 1998, intra-COMESA trade grew by 8.45 and 10%, respectively. The increased level of intra-COMESA trade means that COMESA products were getting a competitive advantage, including the diversification of manufactured products traded within the subregion.

Elimination of non-tariff barriers (NTBs) and other restrictions: The conventional and conspicuous NTBs include quotas and other quantitative and qualitative restrictions and prohibitions such as restrictive exchange controls.
export and import licensing, restrictions to foreign exchange allocations, technical standards and specifications, etc. COMESA has over the years identified the NTBs existing in each of its member countries and advised their removal. So far, almost all COMESA countries have eliminated some of these NTBs. It should be noted, however, that those NTBs relating to health regulations and bureaucratic procedures are still applied because of the difficulty to regulate them.

**Trade facilitation:** The major trade facilitation measures of COMESA are in transport, customs administration and trade information and statistics. Road traffic facilitation comprises the following projects:

*Harmonized road traffic charges:* This project was introduced in 1991 and implemented in 10 countries. Efforts are being made to introduce it in all COMESA countries.

*Harmonized axle load limits:* This is already operational in 16 countries. The goal was to have all countries adopt the system by the end of 2000.

*COMESA carrier license and transit plates:* Nine countries had introduced this program by 1998. Efforts are underway for all countries on the mainland to adopt it.

*Road custom transit declaration document:* This system has been operational since 1986. Efforts are being made for the full utilization of the document.

*Advance cargo information system (ACIS):* This computer-based system was initiated to track the movement of cargo and transport equipment through ports (port-tracker), rails (rail-tracker), roads (road-tracker) and lakes (lake-tracker). So far, rail-tracker has been introduced in five railway systems. Port-tracker is being installed in Mombassa and Dar es Salaam ports. The objective is to introduce a regional cargo and transport equipment tracking system in the next five years to capture information from all modes of transport and interchange points and to interface the system with other information networks.

*Yellow card scheme:* This is a vehicle insurance scheme, which covers third party liability and medical expenses valid in all COMESA countries participating in the scheme. Presently, it is operational in 12 countries.

*COMESA customs bond guarantee scheme:* This is meant to eliminate avoidable administrative and financial costs, which are associated with the current practices of nationally executed customs of bond guarantees for transit traffic. It has not yet come into force, but COMESA member countries have agreed to ratify the
Regional trade prospects among COMESA and IGAD countries

scheme as soon as possible to avoid opening and closing customs of bond guarantees at each port of entry. It is expected that the scheme will be fully operational in the next two to three years. In air transport services, the aim was to achieve complete liberalization of air transport services by October 2000 in two stages:

- introduction of free movement of intra-COMESA scheduled passenger services with frequency limits of up to two daily flights between any city pairs; and
- adoption of multiple designation and elimination of capacity restrictions leading to free movement of intra-COMESA air transport services.

Regarding customs administration, the Automated System for Customs Data and Management (ASYCUDA) and EUROTRACE are the two major programs that go hand in hand. ASYCUDA is a computerized customs data-capturing system to record manifests, customs declarations, customs accounting procedures, examination control, warehousing, import and export licenses and permits, and foreign trade processing procedures. It enables accurate recording and storage of all customs data, faster clearance of goods by customs, generation of accurate, reliable and timely trade and customs revenue and statistics. It reduces fraud in the collection of customs revenue thereby increasing customs revenue collection. On the other hand, EUROTRACE uses foreign trade statistics generated by ASYCUDA for efficient, effective and speedy collection, compilation and analysis of foreign trade statistics. The other customs-related projects are the following.

- Uniform Classification of Goods for Customs Purposes – Common Tariff Nomenclature: to harmonize tariff nomenclatures.
- Simplification and Harmonization of Trade Documents and Procedures: the COMESA Customs Declaration Document (COMESA-CD) is to be used for clearance of exports, imports, transit and warehousing in replacement of all declaration forms being used by member states.
- Common competition rules and harmonization of technical norms and certification procedures.

Trade promotion: The trade promotion program of COMESA has the following three components.

- Market and production development and promotion: supply and demand surveys on trade opportunities are undertaken regularly and the results
published. Meetings of buyers and sellers are also convened on various sectors.

- **Trade Information Services (TINET):** was designed to facilitate trade through computerized databases, trade directories, trade inquiries and monthly bulletins. Progress is being made to expand its capacity and consolidate its services for regional networking. TINET information is disseminated through national focal points in member states.

- **Trade Support Services:** is basically meant to strengthen business organizations such as the Eastern and Southern African Business Organization (ESABO), individual chambers of commerce as well as other trade promotion and business organizations or institutions by providing advisory services, organization of trade fairs and seminars and sub-contracting arrangements.

**Elimination of obstacles to the free movement of people and cross-border and foreign direct investments (FDI):** The PTA Treaty was completely silent on the free movement of persons, labor services, right of establishment and residence. But the COMESA Treaty has included a provision (Chapter 28, Article 164) and two protocols are being implemented in this regard: the protocol on the gradual relaxation and eventual elimination of visa requirements, and the one on the free movement of human resources and the right of establishment and residence. Some countries in Eastern Africa have already adopted “visa relaxation” measures—permitting immigration for at least one month, and in certain cases ninety days before residence permit would be required.

Countries of the subregion have embarked on programs to attract and promote private investments, both foreign and domestic. To this end, they have removed some of the constraints to investment in the subregion. However, a good number of countries still restrict the sectors in which foreigners can invest. The latter are often given sectors that involve technological learning. Some countries (like Ethiopia and Uganda) still require a minimum deposit for foreign investors. Regional and outside investors are treated equally in this connection. Overall, the examples of cross-border investments are very few, except for the ones originating from countries like South Africa. With regard to foreign direct investments (FDI), Africa’s share of developing countries’ inflows was 3.8%, the lowest since the early 1980s. On average, Africa’s share of developing countries’ inflows has dropped from 11% during 1986-1990 to 5% during 1991-1996 (World Bank, 1996). This suggests that Africa has not benefited from increased FDI inflows to developing countries.

**Monetary and fiscal liberalization:** PTA introduced the program for the liberalization of payments among member countries. As a result, the PTA
Clearing-House, the Eastern and Southern African Trade and Development Bank (PTA Bank), the PTA Unit of Account, and the PTA Travellers Checks (now the COMESA dollar) were established. The COMESA monetary and liberalization program has the following components.

**Monetary and fiscal harmonization program:** This was supposed to be implemented in the following four phases.

**Phase one (1992-1996):** COMESA countries were required to:
- liberalize all trade transactions and current payments, including official transfers and settlements within COMESA through the Clearing-House mechanism;
- use market determined exchange rates in order to achieve full liberalization of intra-COMESA transactions;
- contain the growth of domestic credit to government and money supply with a view of creating stable monetary conditions conducive to intra-COMESA trade liberalization and expansion; and
- reduce fiscal deficits in order to contain domestic credit expansion and monetary supply growth.

**Phase two (1997-2000):** Currencies of member countries were to be made fully convertible with each other and any restriction on current transactions was to be eliminated. Financial integration was to be intensified through the networking of capital markets of member countries and liberalized movement of financial assets and instruments to promote cross-border capital investment.

**Phase three (2000-2020):** the currencies of member states are required to fluctuate within a given margin. Central banks will remain independent, but monetary policies are to be coordinated by a common COMESA monetary institution.

**Phase four (2020 onwards):** one common currency, issued by a common monetary authority, will be used throughout the COMESA subregion.

**Exchange rate policy:** Most COMESA countries have now liberalized their exchange rate systems, which are market determined. Countries that have not yet fully liberalized their exchange rate policy include Eritrea where some restrictions still exit, Ethiopia where the rate is set through a weekly auction, Namibia and Swaziland whose currencies are directly pegged to the South African Rand.
**Monetary policy:** Monetary policies are to be liberalized and harmonized throughout the COMESA countries. These policies include inflation control and price stability measures as well as stable and competitive exchange rates.

**Fiscal policy:** Fiscal policies are also to be liberalized and harmonized in all COMESA countries. This calls for a reform of the fiscal system in member countries to make the fiscal administration more efficient, to reduce and restructure public expenditure and budget deficit, to improve economic management, to undertake privatization policies, etc.

**Establishment of a Customs Union and a common external tariff (2004):** The FTA established in October 2000 is envisaged to be operational for four years. By 2004, all administrative, legal, institutional and logistical preparations pertaining to the Customs Union are to be completed. COMESA member states have already committed themselves to implement a Common External Tariff (CET) of 0% for capital goods, 5% for raw materials, 15% for semi-finished products, and 30% for finished goods by the year 2004. The CET is meant to provide temporary protection or serve as a springboard for COMESA countries to enable them gradually achieve higher levels of efficiency for them to become competitive first regionally and then internationally.

**Establishment of a monetary union (2025):** This is sought to create a zone of monetary stability with an efficient exchange and payments system in order to facilitate the market integration of the subregion. This should eventually lead to the use of a single currency issued by a common central bank throughout the subregion.

The programs discussed before show the advances made by COMESA to achieve its objective of economic integration in Eastern and Southern Africa. The expanded size of the market and a liberalized environment that is conducive to free trade and investment are expected to enable the use of complementary resources in the subregion and hence to increase the trade potentials of member countries. However, all member countries were not able to fulfill their commitments to the COMESA programs, some of which remained to be fully implemented. For example, the establishment of the FTA was to be accomplished on 31 October 2000. So far, nine countries (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia and Zimbabwe) have expressed their readiness to take part in it. Five others (Burundi, Eritrea, Rwanda, Comoros and Uganda) had indicated that they might join the FTA by 2001. The remaining countries are not yet ready for it.

The benefits of the FTA can be optimized only if all member states implement the COMESA programs as scheduled. Non-compliance to the tariff reduction program by some member states has an important bearing on the likely
success or failure of the free trade scheme. The fact that all countries are not able to advance at the same pace in implementing the free trade program complicates the free trade efforts and closer integration. It can make free trade less effective in terms of stimulating the involvement and investment of the private sector. While participating countries reap the benefits of free trade and trade liberalization, the realization of these benefits by weaker economies will depend on their capacity to increase their participation and compete more vigorously.

Trade Activities and Prospects in the COMESA Subregion

The subregion has great potentials to expand its trade. It has enormous endowments in energy, agriculture and industrial development, mineral wealth, oil and natural gas reserves, forestry, marine and fresh water resources (with important implications for the development of agro-industries), animal feed manufacturing, meat and milk processing, and production of various agricultural staples. Particularly agriculture is the backbone of most COMESA countries. It plays a key role in trade and industrial development. In 1997, it accounted for 24% of COMESA’s GDP. It employed 70% of its labor force and made up for 28% of its exports. It contributed more than 50% of the raw materials to the industrial sector. These figures are much higher in some countries.

Agricultural production has, however, been growing very slowly, at an average rate of only 1.9% per annum in the past three decades. This rate is currently decreasing; when viewed against the population growth rate of about 3% per annum, there is an indefensible food deficit situation in the subregion. The decline in agricultural production is attributed mainly to:

- slow rate of production;
- inappropriate agricultural technology;
- environmental degradation;
- unfavorable land use and tenure policies;
- periodic drought;
- political instability and wars; and
- unfavorable external economic environment.

To revert this situation, the agricultural development strategy of COMESA is based on the following four ‘I’s.

- **incentives**: to farmers to enable them produce more;
- **inputs**: to make credit available at reasonable interest rates to acquire agricultural inputs:
• institutions (including land reform and expansion of training, research and extension services); to assist agricultural development; and
• infrastructure: to improve access to the markets.

The COMESA subregion has ample marine and inland fishery resources with annual catch estimated at 1.8 million tons (the potential is estimated at 6 million tons). Rural small-scale fishing communities essentially exploit these resources. Industrial fishery is at the moment very small and is dominated by distant fishermen who catch from marine waters. Developing the capacity of national industrial fishing is impossible at the moment due to the big investment required, which is unaffordable to COMESA countries.

The livestock share of agricultural output is immense in the COMESA subregion as the subregion has the highest number of cattle in Africa and a sizeable number of other livestock species (Table 2). However, the current productivity of the livestock sector is low (in both meat and milk). This is primarily due to lack of quality feed and problems of livestock diseases and pests that are not controlled yet.

Table 2. Livestock percentage of the COMESA Subregion from total livestock population of Africa and the World

<table>
<thead>
<tr>
<th>Livestock species</th>
<th>Percent from Africa</th>
<th>Percent from World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>60.15</td>
<td>9.92</td>
</tr>
<tr>
<td>Goats</td>
<td>46.98</td>
<td>13.69</td>
</tr>
<tr>
<td>Sheep</td>
<td>37.57</td>
<td>8.23</td>
</tr>
<tr>
<td>Camels</td>
<td>35.79</td>
<td>27.36</td>
</tr>
<tr>
<td>Buffaloes</td>
<td>100.00</td>
<td>1.94</td>
</tr>
<tr>
<td>Chickens</td>
<td>33.62</td>
<td>2.86</td>
</tr>
<tr>
<td>Pigs</td>
<td>27.43</td>
<td>0.64</td>
</tr>
</tbody>
</table>

Source: COMESA, October 1999.

Some COMESA countries, based on what they reported to the UN COMTRADE in the 1990s, have comparative advantage profiles (Table 3).

Table 3. Revealed comparative advantages of nine COMESA countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Product</th>
<th>Exports ($000)</th>
<th>Share in country exports (%)</th>
<th>Share in world exports (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Angola</td>
<td>Petroleum products</td>
<td>61431.70</td>
<td>99.98</td>
<td>2.04</td>
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<tr>
<td>2. Djibouti</td>
<td>Prepared vegetables 163.20</td>
<td>5.99</td>
<td>0.17</td>
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<tr>
<td></td>
<td>Textile products</td>
<td>236.30</td>
<td>8.68</td>
<td>0.27</td>
</tr>
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<td></td>
<td>Metal tanks and boxes</td>
<td>135.00</td>
<td>4.96</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>Hand tools</td>
<td>112.50</td>
<td>4.13</td>
<td>0.42</td>
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<td></td>
<td>Leather manufactures</td>
<td>28.10</td>
<td>1.03</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Metal manufactures</td>
<td>146.30</td>
<td>5.37</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Leather</td>
<td>50.60</td>
<td>1.86</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>Non-ferrous base metal</td>
<td>11.30</td>
<td>0.41</td>
<td>0.09</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Prepared meat</td>
<td>135.00</td>
<td>4.96</td>
<td>1.22</td>
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<td>Vegetable oils</td>
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<td>0.44</td>
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<td>1.45</td>
<td>0.40</td>
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<td>Other manufactured goods</td>
<td>33.80</td>
<td>1.24</td>
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<td>Prepared fish</td>
<td>50.60</td>
<td>1.86</td>
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<td>Textile yarn and thread</td>
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<td>0.78</td>
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<tr>
<td>Glassware</td>
<td>11.30</td>
<td>0.41</td>
<td>0.24</td>
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<tr>
<td>Woven cotton fabrics</td>
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<td>0.51</td>
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</tr>
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<tr>
<td>Other nonmetallic mineral manufactures</td>
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<td>Rubber articles</td>
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<td>0.78</td>
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<td>Sugar preparations</td>
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<td>0.41</td>
<td>0.41</td>
<td></td>
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<td><strong>3. Ethiopia</strong></td>
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<td>0.10</td>
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<td>Non-wheat meal or flour</td>
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<td>0.38</td>
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<td>8020.00</td>
<td>51.98</td>
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<tr>
<td>Dyes and tanning products</td>
<td>70.80</td>
<td>0.46</td>
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<tr>
<td>Clothing not of fur</td>
<td>1104.10</td>
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<td><strong>4. Kenya</strong></td>
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<td>Margarine and shortening</td>
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<td>0.11</td>
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<td>Base metal household equipmt.</td>
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<td>Articles of paper</td>
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<td>Non-electric wire products</td>
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<td><strong>5. Madagascar</strong></td>
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<td>Weight</td>
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<td>----------------------------------</td>
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<td>--------</td>
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<td>Printed matter</td>
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<td>0.00</td>
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<td>0.23</td>
<td>0.05</td>
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<td>Other manufactured goods</td>
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<td>0.01</td>
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<td>Special textile products</td>
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6. Malawi

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<td>Oil seed flour</td>
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<td>5.90</td>
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<td>Inorganic elements and oxides</td>
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7. Mauritius

<table>
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<th>Price</th>
<th>Weight</th>
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</thead>
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<td>Travel goods and handbags</td>
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8. Seychelles

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Regional trade prospects among COMESA and IGAD countries

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9. Zimbabwe

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<td>Tin</td>
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<td>Travel goods and handbags</td>
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<td>Manufactured fertilizers</td>
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<tr>
<td>Agricultural machinery</td>
<td>5624.50</td>
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</table>

Source: UN COMTRADE (Different years)

This tabulation reveals two major points: first, most countries have a comparative advantage in a very limited range of products and the same products are produced by other countries in the same subregion. Second, most of the countries do not have a comparative advantage in those products that are of primary importance in regional imports such as machinery and other equipments for transport and
industry. Studies carried out by the World Bank show that manufacturing machinery and transportation equipments generally needs capital-intensive production techniques for which African countries do not yet have the resources.

The COMESA and IGAD subregions have tremendous potentials to expand intra-subregional trade. Furthermore, the efforts by COMESA especially those helpful to liberalize trade through a range of programs will definitely offer better prospects for trade. However, these are constrained by the following factors.

- COMESA and IGAD countries have similar production structures mainly geared towards the export of primary commodities, in which the prospects for intra-regional trade are generally limited.
- The current trade patterns and direction in COMESA and IGAD countries are dominantly in favor of the traditional trading partners of Europe and other developed countries.
- There are structural weaknesses limiting the capacity to produce and export a wide range of manufactures.
- COMESA and IGAD countries do not exploit the abundant natural resources of the subregions in a complementary manner; and
- Member countries do not fully comply to trade liberalization programs of the RECs to optimize the success of the free trade scheme.

**Conclusions**

The establishment of FTA and abundant endowment with natural resources cannot produce, by themselves, the expected positive effects in the COMESA and IGAD subregions. Member countries should therefore:

- take essential adjustment measures to their production patterns to fully benefit from the opening up of an expanded market in Eastern and Southern Africa;
- comply to their agreed commitments towards economic integration in Africa; and
- achieve uniformity, or convergence of efforts towards macro-economic stability and harmonization and convergence of viable trade and economic policies among themselves.
References


Introduction

Ethiopia is still an observing country in the World Trade Organization (WTO). Towards the end of 1999, a national committee was established to study future position of the country in this organization. This committee had several sub-committees including the one assigned to study the agreements on agriculture, sanitary and phyto sanitary activities in which the author of this paper served as a group leader. This paper reviewed the Agreement on Agriculture (AoA) with an emphasis on domestic support. The review was made to assist policy makers in their decision on whether Ethiopia shall become a member to the WTO. I suppose that the decision should be established on the principle of benefit optimization from world trade and concurrently maintaining national interest and security and the right to exist and operate as a sovereign nation. Furthermore, the review was made on the premise that the membership to the WTO improvises Ethiopia than it is today; given its resource base, production technology, and people tastes and preferences for commodities produced both locally and abroad. A fair play should be prospected in the local and domestic markets using instruments other countries use to secure the most attainable comparative and competitive advantage in international trade.

Two approaches were used to review the agreement: theoretical and practical approaches. Either approach could be used provided that we understand the consequence of the recommendations one would draw based on them. “The classical theory represents the way in which we should like our economy to behave. But to assume that it actually does so is to assume our difficulties away” (Keynes, 1936). It is the difficulties facing the economy of Ethiopia rather than the theory of trade and free market which shall govern the decision on whether the country should become a member to the WTO. Ethiopia must examine trade theories in view of their relevance and support to explain its economic realities. Theories and principles which might have been valid and appropriate for one economy in a given region or at a given time might not be valid for other economies at the same or different time.
Trude agreement on agriculture and domestic support and future position of Ethiopia in the WTO

Whichever approach is followed, Ethiopia has to be careful not to be a net loser by signing the agreements and becoming member of the WTO. Particularly, it has to study thoroughly the Agreement on Agriculture not only from the view point of gain and loss to society measured in terms of economic efficiency, but also in terms of equity, stability and national security both from micro and macro economic perspectives. In the case of Ethiopia, the agreement shall pave way to improve the living standards of smallholder farmers who produce more than 95% of the agricultural output. Consumers and taxpayers shall also be put into the micro picture. Ethiopia is macro in terms of its people and the nationhood in the context of not only economic gains or loss to society but also in terms of the right to use ones national resources for the well-being, resource security, peace and sovereignty of the country in order to realize sustained economic growth and development. Ethiopian farmers have to be supported to emerge out from the deepening poverty mainly related to low farm income, which in turn is associated with low prices for agricultural products and high prices of farm inputs. Damping of cheap agricultural commodities in the name of free trade has to be resisted in view of national interest and security. All parties in the economy, i.e., producers, consumers and taxpayers shall take share of the gain and loss of fair trade, and no one shall be the sole loser or beneficiary in the game. Thus, Ethiopia has to stand against any agreement which may worsen its problems of food security, poverty and unemployment and increase its dependency on other economies.

Domestic Support, Taxes and Subsidy

In examining the domestic support component of the WTO Agreement on Agriculture (AoA), one has to take note of criteria of exemption from the reduction commitments. In this agreement, it is stated that exemption could be claimed if the support has no or at most minimal trade or production distorting effects. Besides, the support shall be provided through a publicly funded government program not involving transfers from consumers; and the support shall not have the effect of providing price support to producers. Following is a quick review of basic concepts and principles related to commodity program interventions, price support, taxes and subsidies helpful to understand these exemption clauses and the entire issues related to the domestic support measures.

It is important to first recognize that there is no government, particularly in developing countries, whose source of fund (tax) is not heavily dependent on consumers' income and commodities. Of course, producers are also consumers. Generally, in view of agricultural commodities, taxes decrease while subsidies increase production and consumption in domestic economic activities.
Governments act on behalf of the public interest and use both taxes and subsidies to stimulate and maintain a fair distribution of domestic resources in production and consumption of agricultural commodities.

In theory, countries may formulate different commodity programs to intervene in domestic markets in order to benefit the producer or the consumer or the society at large. Commodity program interventions could be in the form of mandatory supply controls or price supports without production controls. Given the supply and demand functions and their elastic ties, the results of mandatory controls may vary. However, mandatory supply controls backed up with price support may be used to make producers gain and consumers lose.

Price support without production controls could result in excess supply, and program implementers could take two measures: they can decide either to dispose the excess outside the market or to subsidize the difference between the supply and demand prices. This clears the market. The subsidies are transfers from taxpayers to producers in order to maintain producers' price at a predetermined higher-than-equilibrium price, at the same time maintaining consumers' prices lower than equilibrium prices. In this exercise, it is possible that both consumers and producers gain at the expense of taxpayers, i.e., taxpayers lose. This is the cause of the food price dilemma in many economies. If we leave everything to the market, then we may face a free market equilibrium price deemed too low to avoid hardship and reduce poverty among producers, and too high to avoid hardship and reduce poverty among consumers. It is important to note that though consumers and producers seem to gain from subsidies, they could also lose, in theory, because taxpayers are either producers or consumers. It is common to hear that subsidies are a negative sum game. Consumers and producers lose more as taxpayers than they gain as consumers and producers. Despite the theoretical shortcomings of this game, many countries play it.

The option of disposing excesses by spoiling or by allocating them to uses with little or no value has also been exercised by some countries, mainly the developed ones. Disposing surpluses while implementing a commodity program that has a price support without production control component often brings loss to consumers and taxpayers, and gain to producers. In all cases, economic theory tells us that the society as a whole may gain or lose—often being a loser in the case of subsidies.

Countries may also use prices to intervene in domestic economic affairs mainly for food self-sufficiency. The motive of the program could be redistribution of income and reduction of social costs in domestic markets to increase food self-sufficiency and to decrease food cost through a ceiling and floor price. Like the other afore-mentioned intervention policies, the food self-sufficiency policy that raises producers’ prices to increase domestic quantity supplies could end with gains to producers and losses to consumers and the society at large.
The theoretical analysis of domestic intervention policies is based, like other welfare measures, only on the principle of economic efficiency measured by national income. Economic efficiency as a measure of policy or program performance ignores other socio-economic objectives such as equity and stability. For example, if we take the case of the food self-sufficiency policy designed on the basis of economic efficiency, we have to examine it carefully in terms of what will happen if self-sufficiency is achieved at the expense of national income to purchase supplies from abroad when domestic production is short: or if self-sufficiency is achieved by use of fertilizers and pesticides purchased from abroad which are more subjected to interruption than food imports and if domestic production is variable from year to year. All these may cause economic (price) instabilities that may increase the danger of food shortage. Besides, equity may not be served by self-sufficiency because high food prices especially oppress the poor, who spend a high proportion of their income for food. To counter this, a price ceiling policy that brings a low food price could be exercised. This policy often reduces domestic production while increasing the consumption of the food commodity in consideration. In this case, an import subsidy would be required to avoid a massive food shortage in the country. The welfare impact could be that consumers gain while producers, taxpayers, and the society at large lose. The counter argument could be that food shortage may not prevail and the society may not lose if one uses the fund for import subsidy for domestic support in order to attain food self-sufficiency and create egalitarian society.

Those with equity concerns also argue that economic efficiency entails allocating resources to uses contributing the most to output. But an efficient allocation is not necessarily an equitable allocation. Markets can be in equilibrium while some people are starved and others are fattening. Equity-laden policies have to be followed in predominantly poor countries. Therefore, taxpayers shall provide subsidies to producers and consumers in order to raise producer prices and lower consumer prices even though national income could be reduced. But there is no society without loss due to stand of the subsidy policy.

In short, based on classical and neo-classical economic theories of trade, the free market proponents argue that free trade with the rest of the world could benefit many countries and minimize their time and cost to implement various and complicated programs of domestic support, particularly to intervene in the agricultural sector. Especially developing countries were advised to rely on the private market because government interventions in these countries often entailed higher social costs than did the private market failure, which the policies were attempting to correct. But the theory represents the way in which theorists should like our economy to behave. But to follow what they say is to ignore our peoples' suffering from poverty and food insecurity.
Free Trade and the Real World

Theoretically, proponents of open world trade argue that world trade enables countries to specialize in production and consumption and, because of big economies, trade raises full income of participating countries. However, not everyone gains from trade. If tariffs, subsidies, and quotas are used, they reduce full world income. Legitimate questions here are “what is the so-called full world income? Whose income is the world income? And what do countries like Ethiopia get from the increase or decrease of this so-called world income?” I suppose that if we continue getting poorer while others are becoming richer, then the notion of full world income is mainly related to the richer not to the poorer.

Theory of international trade is established on the assumption that countries engage in trade because they gain from the exchange of goods and services with assumed production functions, resource endowment and tastes and preferences in each country. This supposition of the modern theory of international trade gives less importance to the concept of comparative advantage and more importance to the concepts of comparative profit and competitive advantage.

The concept of comparative advantage is based on the assumption that production costs differ from one country to another to justify the support for trade. It entails that trade greatly specializes in each nation whereby each participating country produces and exports the commodity in which it has a comparative advantage and imports the other commodity at international prices. As such, trading partners benefit from trade. The concept, in addition to the relative production cost assumption, also assumes that gain could be made from trade provided countries pay no transportation costs and institutional impediments to trade such as tariffs, quotas, subsidies, and domestic price supports.

Based on the target beneficiary, subsidies are of two broad types, namely, domestic subsidy or production subsidy, which is given to the domestic industry in the process of production and export subsidy. The export subsidy directly enhances the competitive position of the exporter in relation to the exporters of other countries or domestic suppliers. The production subsidy enhances the competitive position by providing support at the stage of production. In the context of development theory, subsidy is well recognized as an important tool for the development of developing countries with the assumption that these countries use subsidies to diversify and develop their production and export. This is actually a cover for the practices of developed countries. These countries, by the name of aid, promote hidden development-protective and market-conquering strategies with the extent of hundred percent and even more subsidies for their producers whose products, specially agricultural, are not competitive with the products of developing countries both in local and international markets.
The concept of comparative advantage has no place in the real world. Countries face transportation costs, use tariff and non-tariff barriers, and also formulate and apply different domestic support programs. In this regard, the concept of comparative profit considers consumers’ preferences, production possibilities, and trade barriers through data of costs and returns. The issue of comparative profit also states that each country will specialize and export the commodity in which its profits per unit of fixed resources are maximum. A relatively realistic concept is the concept of competitive advantage. A country is said to have a competitive advantage in those exported commodities providing highest return per unit of fixed resources in a world of actual transport costs and trade barriers. Hence, in order to gage a competitive advantage, the country involved in world trade shall formulate a pricing strategy, study the efficiency of its domestic production and marketing systems, develop efficient price information system (both in inputs and outputs be it for export or import goods and services), and establish an efficient tracking system of the many changes which would take place from time to time including port charges, and domestic and foreign transportation charges.

To be an effective member of the world trade community that assumes to exist in a competitive environment, Ethiopia has to build a capacity to study the impact of tariffs and non-tariff barriers on its domestic production, domestic and international trade and the society at large. As a partner of the world trade, it should not indulge in a fictitious world income. Instead, it has to distinguish between the effective and nominal rates of protection and take all appropriate measures to protect and support its producers. Theoretically, effective rate of protection takes all appropriate measures to protect and support its producers, and measures changes in the domestic value added after the imposition of import taxes on output and imported inputs. Therefore, effective rate of protection estimates the effects of protective measures not only on traded output but also on traded inputs. The nominal rate of protection estimates only the effects of protective measures imposed on outputs but not on inputs. The comparison between the nominal and effective rates of protection could help to tell whether domestic producers would be better off, everything else being equal, by not being protected through tariffs. But the valuation of outputs and inputs must be fair and unbiased towards opening markets for outside products and inputs.

The Agreement on Agriculture and Domestic Support

The Agreement on Agriculture should be critically studied in view of the economic base of Ethiopia and its interest in the WTO. The WTO document
indicates that AoA is based on the rationale of open international trade in the agricultural sector. It presupposes the supremacy of the price system and the comparative advantage of this sector. The implication is that a country must import its agricultural products from countries that produce them more cheaply than using its own production. This may be all right in theory; but in practice, it can be disastrous for agricultural products of countries like Ethiopia.

Furthermore, the WTO document states that the AoA was set to establish a basis for initiating a process of reform of trade in agriculture. Its long-term objective is to establish a fair and market-oriented agricultural trading system in order to effect a substantial progressive reduction in agricultural support and protection measures, and as a result to prevent restrictions and distortions in world agricultural markets. The agreement is put to achieve specific binding commitments in the areas of market access, domestic support, and export competition. Following is a review of the agreement specifically in terms of the domestic support issues stated in the AoA in conjunction with the overall theoretical explanations given in the previous sections of this paper.

**Obligations**

If Ethiopia becomes a member of the WTO, its total annual spending on domestic support, measured in terms of the aggregate measurement of support (AMS), should not exceed the annual bound commitment level (ABCL). ABCL is an annual ceiling to the value of domestic support. According to the AoA, ABCL was to be reduced in equal installments between the years 1995 and 2000 (2004 for developing countries), such that developed and developing countries make respectively 20 and 13.3% reduction from the base level of domestic support in the final years of their implementation. Least developed countries are totally exempted from reduction commitments (Lal Das Bhagirath, 1998).

The AoA classifies the AMS into two categories: product specific and non-product specific support. The product-specific AMS includes market price support, non-exempt direct payment, and other measures (e.g. input subsidies, support to reductions of marketing cost, etc.). The non-product AMS includes measures like irrigation subsidies, agricultural insurance subsidies and agricultural credit programs. Specifically, domestic support exempted from the reduction commitments shall be measures that are considered to have no, or at most minimal, trade-distorting effects. The basic criteria for such measures are that they are:

- provided through a public-funded government program, not involving transfers from consumers;
- having no effect of providing price support to producers; and
• met with policy-specific criteria and conditions stipulated in the agreement.

The domestic support component of the agreement includes exemption and reduction commitments in the following programs:
• general service related to research, pest control measures, training: extension and advisory services: inspection services: marketing and promotion services: infrastructure services:
• food security:
• food aid:
• direct payments to producers:
• decoupled income support:
• income insurance and income safety-net:
• natural disasters:
• producers' retirement:
• resource retirement:
• investment aid:
• environmental assistance: and
• regional assistance.

Besides the purchase and sale of government stock at administered prices and also provisions of food to the poor at subsidized and reasonable prices, there are exemptions from the reduction commitment. The subsidy involved in the purchase of government stock, however, is to be included in the calculation of the level of annual subsidy, which in turn is subject to annual ceilings. This means that the year-to-year ceiling reduction has to be carried out by reducing other types of subsidies, if this particular item is not subject to reduction.

Rights

If Ethiopia becomes a member of the WTO, it will enjoy the right of exemption from the reduction commitments for product-specific and non-product-specific domestic support with the de minimis percentage of 10% of the total production value of the basic agricultural products. This 10% de minimis level is divided into two parts. A de minimis exclusion of product-specific subsidy, if it does not exceed 5% of the production value of that product, and in the case of non-product-specific subsidies, the de minimis level is 5% of the value of total agricultural production.

It can also take domestic support measures which are parts of its development program, such as investment subsidies, input subsidies available to low-income or
resource-poor producers, or support to diversification from eliciting narcotic production. It can also enjoy measures of direct-payments under production-limiting programs, of which payments should be based on fixed area and yields, and should not exceed 85% of the base level of production.

It is important to note that the AMS reduction commitments of product-specific support are made on the aggregated value, not on the level of support to each specific product. Hence, as long as the total current AMS is within the bound level, determining domestic support on which product should be reduced by how much is left to the discretion of the country. The country could maintain a leverage even to increase the support to sensitive products, by reducing the level of support to less sensitive products.

Implications

Ethiopia shall prepare its schedule to join the WTO. Unless it has support program that can be registered as existing in the base period of the agreement, it cannot start new measures beyond the de minimis limit.

It has been argued that the de minimis limit of 10% may not provide developing countries with sufficient level and flexibility of support provision to domestic production. This, in conjunction with inflationary effects on the AMS calculation, can reduce total fund available for domestic support in real terms. This is because the annual AMS calculation is based on the difference between the administered price and the nominal fixed world price for the base-period, and the country which has experienced a substantial rate of inflation since the base-period faced a reduction of the total amount available for domestic support in real terms. One possibility would be to allow all countries with rates of inflation beyond an agreed threshold to convert their external reference price (and current administered prices) into a less inflationary currency, or into special drawing rights, or to specify their commitments in real terms.

The criteria of exempt measures are not clearly defined. Thus, countries may have different interpretations in classifying their domestic support measures. The AoA has no provisions of a mechanism to assess conformity of those measures, and many of those measures are not commonly used by developing countries (e.g. direct payments to producers, decoupled income support, production retirement programs, resource retirement programs).

The subsidy provided by developing countries in purchase of food for stocking and public distribution is exempt from the reduction commitment. But the difference between the purchase price and the external reference price has to be included in the calculation of the AMS. The AMS should be mentioned in the schedule of Ethiopia and it signifies that the support cannot exceed that level in
that year. A country choosing to subsidize the food purchase for stocking, for example, will have to reduce subsidies on some other items to limit the subsidy to the level of the AMS in that year. This would be possible even without this special dispensation. Hence, this provision, although seemingly appears to be a special favor for developing countries, is actually not so. Besides developed countries with 5% de minimis level, using the provisions of the AMS, can continue to spend the equivalent of 50% or more of the value of their agricultural production on support to producers (CIIR). In contrast with the 10% de minimis level, the agricultural sector in developing countries receives little or no support owing to overvaluation of exchange rate, constraints of budget, lack of infrastructure and, administrative commitments under the structural adjustment programs.

The implications of the Agreement discussed so far are explicit and technical, as experts of many developing countries have pointed out. The implicit but practical implication is that countries like Ethiopia are required to simply be markets for agricultural products of developed countries. This is because, in actuality, even the so-called exempt criteria shuts down the source of fund of developing countries for domestic support programs and their ability and capacity to be at the competitive edge. The three criteria of exemption for domestic support are the impossible ones. They are simply binding chains on developing countries to exercise no domestic support. Besides, because of the inflexibility built in the agreement, developing counties who even became members of the WTO have had negative experiences although they knew about the obligations and rights of their membership. I believe that the following highlight of the experiences and expected implications of some developing countries helps in deciding on whether Ethiopia shall become a member of the WTO or not.

Experiences of Some WTO-Member Developing Countries

In the Regional Workshop on the WTO Agreement on Agriculture held in Nairobi, Kenya, 10-12 May 1999, Odek argued that the main elements of the current agreement are not very relevant to the African economies. In this workshop, the Ethiopian delegation had stated that the benefits of signing the agreement have to be examined for they may bring possible loss of freedom in agricultural policy formulation. Except Ethiopia, the other participating countries of this workshop were members of the WTO. These countries, namely Kenya, Rwanda, Tanzania, and Uganda reported their experience of adverse effects from implementation of WTO agreements. They reported that:
• Food insecurity has been aggravated by the collapse of domestic agricultural production due to dumping of cheap food from developed countries.

• Discouraging subsidization of farm inputs has led to reduction of fertilizer use in some of the countries due to high costs of inputs, and

• Global liberalization is eroding the non-reciprocal preferential trade benefits African countries have been enjoying in the past.

In view of these, one of the recommendations of the workshop was that though some of the countries in the region signed the WTO Agreements without fully understanding their implications, it is important for these countries to actively participate in the review process with the objective of pushing for changes that are deemed important for them to benefit from the agreement. Particularly, the AoA should explicitly recognize that food security is a Human Rights issue that goes beyond mere trading concerns.

The Agreement gives more ways for the dumping policies of the EU and US, which undermine producers and threaten food security in developing countries. There is no doubt that what happened in the 1980s would repeat with the current Agreement implementation. In the 1980s, beef dumped from the EU caused losses to domestic livestock producers in Côte d’Ivoire, Burkina Faso and other countries. In Kenya, the elimination of subsidies has pushed up the prices of agricultural inputs since the stabilization programs of the early 1990s. Between 1990 and 1992, fertilizer use in Kenya dropped by more than 40%. Prices for farm products did not raise enough to cover the new costs. Local NGOs and the Kenyan National Farmers’ Union suggested that poverty has increased considerably during the most recent economic adjustments.

Liberalization of imports has also depressed prices in local markets, hurting Kenyan farmers and provoking angry protest demonstration (ClJR). Kenya, by signing the AoA, has lost its historical strength of feeding itself. Unless the dumping of cheap food is controlled by removing export subsidies and restricting the price setting power of grain companies, Kenya would continue to suffer from its membership in the WTO. The country could probably regain its own feeding ability if it would implement appropriate policies and be protected from dumped food. These experiences explicitly indicate the prime motive of those who succeeded in forcing agriculture on to the agenda at Punta del Este, where governments launched the Uruguay Round in 1986. The motive was to open markets for companies that trade livestock, grain and other temperate agricultural products.

Reports regarding the experience of Bangladesh in the WTO indicate that it has not seen an expansion as it was expected prior to its access to overseas markets since the AoA came into effect. Bangladesh continues to face problems of tariff escalation in markets of developed countries, despite some improvements.
under the implementation of the Uruguay Round Agreement. This problem discouraged the development of value-added processing industries in Bangladesh.

The WTO Agreement on Agriculture is extremely imbalance and unfair because it applies similar rules to countries with different agricultural structures (Zeist Declaration on Trade Liberalization and the Right to Food, 1999). Specifically, the declaration holds that the Agreement prevents developing countries the use of the support measures that enabled the EU and US to develop their agricultural strength. It obliges poor developing countries to provide market access irrespective of their vulnerable agricultural systems, while allowing the developed countries to protect their markets and provide producer subsidies. The Declaration also states that the AoA allows only agricultural support measures that are out of reach of most developing countries. Its measures of special and differential treatment for developing countries are insufficient in providing for the particular needs of their agricultural sector and their problems of food insecurity: its measures for compensation to net food importing developing countries have never been implemented.

Based on their experiences, several developing countries suggested points of negotiation on the domestic support component of the AoA (Shirotori, 1999). Cuba. Dominican Republic. El Salvador. Honduras. and Nicaragua proposed for a provision to the developing countries. This provision gives flexibility and facilities to assist them in using domestic support in the agricultural sector provided that such support is aimed at improving marketing, transport and diversification of agricultural production or ensuring compliance with sanitary and phyto sanitary regulations. Similarly, Pakistan proposed for better special and differential disciplines and more flexibility in the use of domestic support to the agricultural sector. India has proposed that developing countries need to be given the requisite flexibility within the AoA to pursue their legitimate non-trade concerns. More specifically, developing countries should be allowed to provide domestic support in the agricultural sector to meet the challenges of food security and to be able to preserve the viability of rural employment. as different from the trade-distorting support and subsidies presently permitted by the Agreement.

The WTO Agreement on Agriculture and Expected Impact of the Agreement on Ethiopian Economy

Ethiopia adopted a new economic policy in November 1992. The policy contains measures to change the role of the state in the economy; to promote domestic and
foreign private investment; to enhance public involvement in development; to mobilize external resources; to involve national and regional administrative organs in economic management; and to prepare macro economic policies consistent with the new economic policy (MTI, 1997). Based on the new economic policy, the government formulated a long-term development strategy known as Agricultural Development Led Industrialization (ADLI). This strategy revolves around the productivity improvement of smallholder agriculture and industries based on the utilization of domestic raw materials with labor-intensive technology. In order to implement the new economic policy, a Structural Adjustment Program (SAP) has been implemented. With SAP, a large number of reforms were instituted with respect to removal of price distortions, liberalization of trade, privatization of land, and decentralization of civil service reform, among others.

The WTO Agreement on Agriculture is nothing but a means to liberalize the agricultural economy of participating countries. In this regard, Ethiopia has started, as indicated before, to liberalize its economy via SAP without being a member of the WTO. Today, Ethiopia has accumulated some data and information regarding the effects of liberalization measures in systems of grain and fertilizer marketing, and in subsidizing for chemicals to control plant diseases such as coffee berry disease (CBD).

The liberalization of the grain marketing system of Ethiopia commenced in March 1990 (Asfaw and Jayne, 1997). Since then, it has affected the level and volatility of wholesale prices and price spreads between major and regional cereal markets. Advocates of food market reform have encouraged liberalization as a means of reducing costs in the marketing system—thereby raising and stabilizing farm incomes, promoting farmers' incentives to use productivity-enhancing inputs, and reducing poor households' dependence on food aid for their survival. Marketing costs account for 40-60% of the price consumers pay for staple cereal commodities in Ethiopia.

Prior to 1990, the grain marketing policy of Ethiopia was predominantly socialist-oriented for fifteen years. The government was directly engaged in wholesale and retail trade. The Agricultural Marketing Corporation (AMC) was created in 1976, initially with World Bank support, to buy grain from farmers and sell to urban consumers and state organizations. The objective of AMC was to stabilize prices of basic commodities and protect the interest of the majority of the population. This policy promoted fixed price, forced sell, and quota delivery by farmers to AMC. The policy of forcing smallholders to grow and sell particular grains at below-market prices was not designed to raise food production, but instead to distribute it at subsidized prices, mainly to urban consumers who were politically dominant.

In March 1990, the grain-marketing policy was changed radically. Quotas and fixed grain prices were abolished. Subsidies on wheat for urban consumers were
abolished in 1992. In this year, the AMC was downsized and renamed as the Ethiopian Grain Trading Enterprise (EGTE). The role of the EGTE was revised to stabilize producer and consumer prices and maintain buffer stocks. However, purchases of EGTE have not been sufficient, relative to the total volume of trade, to significantly influence market prices (Asfaw and Jayne, 1997). The study also indicates that the wholesale prices in the markets of surplus producers increased since liberalization. However, farmers are not clear with why price increases at wholesale level automatically translate into higher prices to farmers. Farmers are worried about significant declines of cereal prices in some parts of the country and suggested the use of target subsidies for farm inputs, particularly fertilizer (NFIA et al., 1997). Lower cereal prices were also recorded in markets of cereal-deficit regions—benefiting mainly consumers. This is in contrast to the suffering of the surplus producing regions.

In the liberalized grain market, the volume of food aid released was found negatively correlated with grain prices for which substitutability is high. It has been indicated that lower prices due to food aid impede input use and cereal production by rural households who grow certain cereals as cash crops. Such destabilizing effect of food aid on market prices indulges additional risks and costs on private traders who are likely to pass these costs onward to producers and consumers. This suggests that Ethiopia should maintain its market-oriented economic policy instead of adopting a foreign one. The liberalization of the grain market has shown gains and losses in domestic markets.

The rise of wholesale prices in surplus-producing areas and its decline in cereal-deficit areas shows the free mobility of commodities and the role of supply and demand in price formation. The losses are related to a number of constraints that inflate costs in the food system. For example, with liberalization, tariffs on grain movement increased observed price spreads between surplus and deficit regions by 20 - 30%, and thus inflating the wedge between cereal prices of producers and consumers (Asfaw and Jayne, 1997). This imbalance in the grain marketing system of Ethiopia is the effect of liberalization, which is associated with food aid. The fact that market prices have apparently become more integrated since liberalization implies that leakages of food aid in one regional market could affect cereal prices not only in the same region but also in other regions as well. This clearly implies what will happen if Ethiopia signs the AoA. Dumping of cheap agricultural products and food aid would harm producers. The experiences of other developing countries are that after they opened their markets for outsiders, cheap grain from world markets was being used as a substitute for local staples—hurting local producers who had nowhere to sell their crops (CIIR). Besides, poorly timed food aid deliveries have destroyed local grain markets. If Ethiopia wishes to continue using EGTE to stabilize producer and consumer prices and maintain buffer stocks in order to overcome such adverse effects of
liberalization and cheap food imports, it may not do so as wished in Article 3. Annex 2 of the AoA. This article reads as follows.

Stabilization and buffer stock programs shall be an integral part of a food security program and the volume and accumulation of such stocks shall correspond to predetermined targets related solely to food security. The process of stock accumulation and disposal shall be financially transparent. Food purchase by the government shall be made at current market prices and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question.

According to this article, the concept of current domestic market price is not clear whether it is to mean by the play of demand and supply in the market or else. Beyond that, this article infringes the right of a country to stabilize domestic prices via its own policy measures. Besides, as mentioned earlier, a country choosing to subsidize the food purchase for stocking will have to reduce subsidies on some other items so as to limit the subsidy to the level of the AMS in that year. This, in the case of Ethiopia, means the continuation of EGTE will come under question from two sides: one from its own role as a stabilizer of producer and consumer prices by maintaining buffer stock, and the other from its role to compete for the meager fund to be available for domestic support programs within the 10% de minimis limit. All these indicate the position of the Ethiopian delegation in the Nairobi Workshop, that the benefits of signing the agreement have to be examined in view of the possible loss of freedom in agricultural policy formulation, has a strong base to be supported.

Until recently, not only in Ethiopia but also in almost all developing countries of Africa, governments were heavily involved in the fertilizer sector. Fertilizer subsidies were widespread in Sub-Saharan Africa. These have been reduced substantially because of adjustment programs and economic reforms pushed by external donors or loan agencies like IMF and the World Bank. There were several reasons for the widespread use of fertilizer subsidies in African countries to promote fertilizer use among smallholders. The high fertilizer prices (no control over international prices) and the need to compensate for the limited availability of credit to smallholders are two of these reasons. The current AoA does not allow subsidies to farm inputs that include fertilizer. More specifically, the two factors, which would reduce fertilizer use in Ethiopia are the rising of fertilizer prices and the falling of grain prices (NFIA et al., 1997). This study estimated the impact of the withdrawal of fertilizer subsidy on fertilizer use. The withdrawal of fertilizer subsidy is expected to increase fertilizer retail price by 30%. Fertilizer demand is expected to fall by 9%. Of course, it was not possible to estimate the reduction in fertilizer demand caused by deferred fertilizer consumption by farmers who have yet to adopt
fertilizer use. NAFIA et al. (1999) also indicated that fertilizer use is expected to fall by 9-12% in response to its once price increase and total cereal output will decrease by 1-2%. While the impact of increase of fertilizer cost on output is estimated to be modest, the impact on cereal price formation might be substantive. In addition, the analysis of profitability of fertilizer use itself shows that farm income is much more sensitive to changes in output price than to fertilizer costs. This implies that even if farmers use fertilizer and achieve significant yield increases, they may find no market for their produce. This, in turn, could lead to reduction of profitability, increased credit default, farm closure or abandons and migration.

Indeed, the combined effect of deregulation and liberalization of fertilizers, improved seeds, agrochemicals, veterinary medicine, and grain markets would have a complex and often depressing impact on the agricultural economy of Ethiopia unless government intervention programs are introduced in areas where there is urgent need. Credit is critically important for farmers, retailers and wholesalers of Ethiopia's agricultural production and marketing system. Credit on its own, however, can do little. The government has to establish strong technical assistance and other support programs. This is because farmers may have difficulty in repaying their loans if their use of fertilizer is not profitable. Technical assistance in areas of fertilizer application, weed control, plant disease and pest control could help increase profitability. Programs to cover crop failure due to natural disasters or to support output prices of producers could prevent massive default of farm credit. In fact, some form of target subsidy could be justified in the Ethiopian context (Ibid). Such subsidy shall be used to assist disadvantaged groups and more remote areas. A target subsidy could also be directed at minimizing the risk and uncertainty associated with production. However, this finding and the entire desire to support Ethiopia's agriculture can be curtailed if Ethiopia becomes a member of the WTO, unless improvements and adjustments are made in the existing AoA.

Coffee is the major foreign exchange earner in the Ethiopian economy. However, its production has been low mainly due to coffee berry disease (CBD). The national yield loss due to CBD has been estimated to be 20% of the total production (Melaku and Samuel, 1999). In 1985, losses of up to 52.5 and 100% had been reported in the then Habro Awraja and in some private coffee farms in Hararge, respectively. Two strategies, namely planting resistant coffee selections and fungicide spraying, have been employed to manage CBD. Though smallholder coffee growers have tried both, since the removal of fungicide subsidy in 1994, they have been left with their local varieties or with the planting of resistant selections. Effective use of the chemical has been constrained mainly by the high cost and unavailability of the chemical or its availability in adulteration (Tsegaye et al. 1999). Generally, fungicide spraying for the control of CBD in the country is deceased due to policy changes on subsidy that raised the cost of the fungicide beyond the purchasing capacity of the farmers. In the
earlier days of CBD occurrence, subsidy for fungicide had varied from free of charge to 20% charge to supply the fungicides. At the current fungicide prices, farmers cannot apply fungicide against CBD. This, coupled with the inadequate, inefficient, and untimely availability of the chemical and lack of access to credit, has been a serious problem in the coffee production and marketing system. For sometime to come, both subsidy and strong credit facilities shall be put in place so that smallholder coffee growers can have access to fungicides and other farm inputs. The subsidy has to resume to minimize the damage caused by CBD and the high opportunity cost of allowing such damage to continue to the national economy, particularly to export earnings and government revenue.

Conclusions and Recommendations

Ethiopian economy is still in transition to a better one with substantial contribution of the agricultural sector to the GDP of the country through the provision of food for the growing population and raw materials for domestic industries. In this agrarian economy, a decline in agricultural production could bring food insecurity, critical income shortage on farmers, and structural and socio-economic problems. Hence, millions of small-scale farmers of the country dominating the agricultural sector shall benefit from the support (be it financial or material) the economy can afford.

Ethiopia has to maintain its own development policies. To do so, it must be able to maintain its ADLI strategy and use domestic support measures, specifically those related to increased agricultural productivity, rural development, food security, and improvement of income and living standards of subsistence farmers. It has to foresee that its membership to the WTO will guarantee the goals and targets of its strategy, that is the ADLI. It should not grossly divert its own ADLI-based social and economic growth policies and priorities. Furthermore, if it becomes a member to the WTO, it should not be for the sake of getting assistance from the international community. Instead, it should design policies and programs to mobilize the required external finance and other resources to its priority areas of development.

Farming in Ethiopia is predominantly subsistence at the household level that it is not taken up as a commercial venture. It is extremely difficult to harmonize these special characteristics with the operation of price mechanisms and the commercial nature of agriculture in developed countries, which are the underlying principles in the AoA. The consequence of these principles is that livelihood of farming households is to be threatened on a large scale if these farmers are exposed to international competition in agricultural products.
The economic structuring and reform exercise in Ethiopia must be implemented with a clear understanding and monitoring of the socio-economic effects. This is because the majority of the working population in this country is engaged in the agricultural sector, consisting mostly of small-scale farmers. In this regard, Ethiopia’s move towards the membership to the WTO must recognize the importance of agriculture. The AoA needs to be carefully studied specially in view of its adverse effects from further agricultural liberalization as seen from SAP measures. Specifically in terms of giving flexibility regarding the provision of domestic support for its agricultural sector.

It is important to note that developing countries like Ethiopia, which have not yet completed the reform of their domestic agricultural and trade policies to take advantage of global markets, should seek time to coordinate their reform measures with the WTO commitments. The benefits to the individual country from the continued improvement of market access and the curbing of disruptive subsidies are proportional to the extent of involvement in world markets. Domestic reforms, thus, play an essential role in the trade negotiation strategy of the country.

In short, in view of membership to WTO and specifically in view of domestic support programs, policy makers and practitioners in Ethiopia have to observe the following.

- Farmers everywhere talk about weather and market risks. In Ethiopia, as of now, we may not have the ability to grant domestic support to cover for various production and price imperfections arising from such risks. However, flexibility to use support measures has to be instituted in the economy.
- Before going to the negotiation forum, Ethiopia has to identify and prepare specific agricultural support programs where there is a foreseeable need. These programs should be notified to the WTO.
- Ethiopia shall be well prepared to negotiate for exemption from undertaking commitments on domestic support programs. Particularly, it must have a freedom to undertake any relevant policy and strategic measure to cope with rising food requirements and associated food issues, and to assist the many small-scale farmers to increase food production capacity, among other things, in terms of marketing, storage and distribution.
- Once the programs are identified, Ethiopia has to mention in its schedule the levels of subsidies applicable in different years noting that it may also apply any subsidy in the agricultural sector beyond the de minimis levels. Besides, the commitment on domestic support should remain within the limits of the ceiling indicated in the schedule to be prepared and presented.
- In order to gain a competitive advantage in world trade, Ethiopia must formulate a pricing strategy, study the efficiency of its domestic production and marketing systems, develop efficient price information system both in inputs and outputs (be it for exported or imported agricultural goods and services), and establish an
efficient tracking system of the many changes which would take place from time to time including port charges and domestic and foreign transportation charges.

- Being a country which does not have a comfortable stable system of foreign exchange for purchase of imported food for its growing population, Ethiopia has to negotiate to get permission to encourage and develop its domestic food production; and to that extent, it should be permitted to protect its production against cheap import dumping practices and to provide domestic support to the production.

- Similarly, there should be flexibility regarding import restraints and domestic subsidy for the protection of and support to small-scale farmers.

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World Trade Organization. Agreement on Agriculture. WTO.
THE WTO AGREEMENT ON AGRICULTURE AND IMPACT OF THE AGREEMENT ON THE EXPORT OF ETHIOPIA

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Introduction

With a population of more than 60 million, an estimated agricultural land of 75 million hectares, the largest livestock population in Africa, and immense hydro and geothermal energy resources, prospects of Ethiopia for economic development would hardly be doubted. But, the GNP per capita of the country is among the least in the world. It is subject to periodic famine caused by recurrent drought that led it to absolute poverty, unemployment and other problems.

Two of the basic reasons for this unfortunate situation have been what are commonly called 'domestic supply side constraints' and 'inappropriate policies' pursued by governments. The domestic supply side constraints are, among others, weak human and institutional capabilities, inadequate and obsolete infrastructure, poor management systems and a weak industrial base. Lack of a stable political environment and decades of civil strife have worsened the situation.

Another important area of concern, and one this paper was devoted to is the pressure created by what most analysts in developing countries believe, the incredibly unfair and lopsided international economic arrangement that gives advantage to the already rich countries at the expense of poor ones. According to these analysts, developing countries are losing the initiative in making policies necessary for their countries as they are forced to accept programs designed by multilateral institutions and sign multilateral agreements that are not necessarily in their interest. But, opponents of this view argue that such programs usually replace bad policies pursued by local governments and generally improve the performance of the economy.

In any case, autarky is no more a relevant option for policy makers in Ethiopia. The question facing Ethiopia is the how of positioning itself in the increasing economic globalization to benefit the most out of it or, at least, not to be on the losing side of the game. This requires thorough understanding of the
operation of the world economy, a clearly defined and well-thought of domestic strategy, a dedicated and competent government with the will and ability to implement the strategy, and above all, a concerted effort among the least developed countries to ensure that the multilateral agreements they sign are in their interest.

To collaborate with the least developed countries on such agreements, it is important for Ethiopia to clearly define its national interest in relation to these agreements and then identify the communalities in the position of a group of countries by region and eventually in a larger grouping to have its say in negotiations. In this spirit, this paper looked into the Agreement of the World Trade Organization on Agriculture (AoA) in the context of Ethiopian export. It tried to look at the potential costs and benefits of the agreement in relation to Ethiopia's agriculture.

Overview of Ethiopian Agriculture

Agriculture accounts for almost 50% of the GDP, provides employment to 85% of the population, supplies raw materials for 70% of the country's agro industries, and generates about 90% of the country's foreign exchange earnings of which coffee alone accounts for 60%. The crop production sector accounts for about 60% of the total sectoral output.

Despite the high resource bases and suitable conditions for agricultural development, agricultural production and productivity (both of land and labor) is extremely low. Because of this, Ethiopia has been facing food insecurity since the mid 1970's. Actual consumption of calories is estimated to be on average 20% below the minimum accepted nutritional standards of 2100 kcal/head/day. Even though conditions in food production began to improve after 1994, crop production is still declining in the country for various reasons. As a result, the country is facing chronic and transitory problems of food insecurity.

Ethiopian peasants are so poor to supply some of the necessities to increase output and productivity even if they know that inputs help boost production. Yet, a large proportion of Ethiopian population lives on agriculture.

Cognizant of the nature and magnitude of these problems, the Ethiopian Government has taken commendable measures to develop policies and strategies that would coherently address the problems and strengthen the efforts towards achieving food security. The central component of this policy is the strategy Agricultural Development Led Industrialization (ADLI), framed into the Ethiopian context.
ADLI focuses on the productivity improvement of smallholder agriculture and industrialization based on utilization of domestic raw materials with labor-intensive technologies. Through the implementation of the strategy, quantity and quality of production could increase so that the rural population would be adequately fed and their income increased while the population in other sectors would also be supplied with sufficient amount of food at affordable prices. Focusing on smallholder agriculture, the strategy also encourages the growth of both extensive mechanized farms and intensive commercial agriculture.

Two kinds of interventions have been designed to achieve this goal. The first is to use existing resources of land, labor and capital in a more efficient way through improved agronomic practices. The second is to substantially increase resources allocated for the sector to introduce improved technology, be it biological, chemical, or mechanical.

In efforts to be made to attain food self-sufficiency, agricultural research and extension should focus on the problems of smallholder agriculture. Short and medium term research should stress on packaging appropriate cultural practices for different parts of the country. In long-term, research should focus on breeding crops and livestock. The overall effort of agricultural research shall be made to fit into the path of agricultural development undertaken in the different parts of the country. Its primary objective shall be to provide economically optimum technologies to smallholders operating in different farming systems.

The transfer of such technologies is conducted on a broad basis using extension services as a focal point. To effectively impart knowledge and skills, extension service should be brought nearer to the farming community by bringing field level extension workers close to farmers. Through such an extension system, inputs such as fertilizer, seed and pesticides could be adequately supplied to farmers through subsidies, at least initially. This shall be strengthened through a provision of unrestrained access to rural credits and extension services.

As agricultural extension is the base for raising the production of small-scale farmers, the new agricultural extension program named "Participatory Demonstration and Training System" has been formulated based on the ADLI Strategy. The system advocates demonstration and training of farmers on proven technologies in a bottom-up approach. It gives special emphasis to human resource development along with its efforts in transferring appropriate technologies. As to the implementation of the strategy, it involves a package approach addressing the needs of different categories of farmers found in different agro-ecologies. Extension packages currently promoted include packages for cereals and other high economic value crops, livestock development, and post-harvest technologies and natural resource development.

Recognizing the importance of livestock in enhancing the productivity of the agricultural sector, the government has given attention to developing the livestock sub-sector more than ever before. Accordingly, a national strategy document on
improving the production and productivity of ruminant livestock has been prepared and livestock extension packages formulated and implemented to address the major constraints for livestock development. A national authority has been set to promote marketing of livestock and their products.

To achieve sustainable agricultural development, a national strategy on the management and utilization of natural resources and environment has been formulated and is under implementation. The National Environmental Protection Authority has also been established to further develop conservation and regulate its implementation.

In addition, the government has designed an Export Development Strategy to promote export and provide organized support to exporters. The strategy is based on the country’s overall development strategy, ADLI. In order to implement the objectives of the strategy, an Export Promotion Agency has been set.

Basic Features of the WTO Agreement on Agriculture (AoA)

The main provisions of the AoA fall into the following three categories: market access, domestic support, and export subsidy.

Market access

Market access refers to the extent to which a country allows the import of foreign products. Countries have traditionally used both tariffs and non-tariff measures (such as quotas and variable levies) to regulate imports of agricultural goods. The provisions of market access aim at regulating and minimizing barriers to trade. The provisions relating to market access have basically to do with tariffs as follows.

- All existing tariffs are to be bound, that is, fixed. Countries can only reduce bound tariffs when complying with the tariff reduction commitments of the AoA. Bound tariffs cannot be increased.
- All non-tariff barriers (border measures other than simple customs duties) must be converted to tariffs. This is usually termed 'tariffication'. The tariffs should work out to be equivalent to the barriers that were in place in the base reference period of 1986-88.
- All tariffs must have been reduced by an average of 36% for developed countries until 2000. Developing countries are required to reduce tariffs by
24% until 2004. This is an unfair average as tariffs for some items can be reduced more than those of others as long as the aggregate works out to the required 36 or 24%. However, each tariff line must be reduced by at least 15% for developed countries, and 10% for developing countries. The reductions are to take place in equal annual steps.

**Domestic support**

Domestic support is the annual monetary support given by the government to agricultural producers either for the production of specific agricultural products, or in more general forms such as infrastructure and research.

The AoA classifies supports into several categories—those that are acceptable because they are minimally trade distorting, those that are not acceptable as they are obviously trade distorting, those that have ceiling levels, and those that have no ceiling levels.

'Green box supports': These are deemed to be minimally trade distorting. They are acceptable within the AoA and are not subject to reduction commitments.

'Blue box supports': These are a special category created to house production limiting programs of the EU and the US. These include land-set-aside programs of the EU and the deficiency payments of the US. They are not subject to reductions, too.

'Amber Box supports': Amber Box Supports are deemed to be trade distorting and are subject to reduction commitments. The Agreement establishes a ceiling on the total domestic support (calculated as the Aggregate Measurement of Support (AMS)) governments may provide to domestic producers. In addition, it requires developing countries to reduce their AMS by 20% over a period of six years from the average level reached in the base period 1986-1988. Developing countries are required to reduce AMS by 13% over a period of 10 years. AMS is calculated on a product-by-product basis—using the difference between the average external reference price for a product and its applied administered price multiplied by the quantity of production.

*De minimis clause supports*: These supports allow countries to maintain a certain level of AMS. These come in two forms: product-specific *de minimis*-related support and non-product-specific *de minimis* support.
Special and differential treatments: These treatments allow governments of developing countries to provide input and investment subsidies.

Export subsidy

A central issue in the agricultural negotiations of the Uruguay Round was the reduction in export subsidies. In this area, the AoA stipulated the following.

- Export subsidies must be reduced by 21% in volume terms and by 36% in monetary terms over 6 years for developed countries. Developing countries must reduce their export subsidies by 14% in volume and their outlay by 24% over a 9-year period.
- The base period of 1986-1990 was chosen. Where exports were higher, in the early 1990s countries could choose to begin their reductions from the average 1991-1992 export subsidy levels (front-loading provision). Nevertheless, the final volumes and outlay were expected to be 21% and 36% lower than the 1986-1990 values.
- Some flexibility in the reductions was provided to cope with year-to-year market fluctuations during years 2 to 5 of the implementation period by allowing countries to exceed their commitments. However, when this happens, subsidy levels must be reduced in the following year and the cumulative value of subsidies provided and the volumes subsidized over the entire implementation period cannot exceed the totals that would have resulted from full compliance with subsidy schedules.
- No export subsidies can be introduced unless they were provided for in the base period, and no increases in export subsidies must take place from those in the base period. That is, all export subsidies are prohibited with the exception of those indicated in schedules of the countries.
- The Due Restraint provision protects implementation of the export subsidy provision of countries from challenge for 9 years, i.e. until the end of 2003.

Implications of the AoA on Ethiopia’s Export

The agreement in general has some positive elements in relation to the interest of Ethiopia, but many issues concerning the AoA require improvement. Probably the most important positive feature of the AoA is that a serious effort is made to bring trade in agriculture into the rules of international trade. In particular, egregious protectionist policies of many developed countries that have been subsidizing
The WTO agreement on agriculture and impact of the agreement on the export of Ethiopia

their agricultural products for a long time with an adverse effect on developing countries that rely on agricultural products for their export incomes are seriously addressed for the first time in this agreement. The commitment to cut subsidies both on production and prices is indeed a positive step. More importantly, the specific targets of reduction from year to year are another positive measure although the reductions are still small.

There are, however, a number of deficiencies and imbalances in the agreement. The first issue to rise is the underlying principle of the agreement. This principle presumes the supremacy of the price system and suggests that countries should not try to produce products that are not in their comparative advantage. Instead, they should import these products from more efficient countries and concentrate on what they are relatively good at. While this argument seems rational in theory, its practical effect in the food production of Ethiopia could be disastrous. Particularly, if it depends on food imports to satisfy the demands of its population, this could lead to starvation since Ethiopia is suffering from shortages of foreign exchange. For Ethiopia, it may be wise to produce as much of its food requirements as possible domestically. This is desirable even when the cost of domestic production is higher than that of imports. Furthermore, large numbers of small farmers in Ethiopia do not engage in agriculture as a commercial venture. For them, it is a way of life coming from generations. As they do not have any other source of income, they will face a bleak prospect if they are to face international competition.

The general commitment in the agreement for reducing import restraint, domestic support, and export subsidy, particularly for developed countries that have been doing this for a long time, is too small and gives them more room to continue these protectionist measures for a long time to come. Even more troubling is the provision of the agreement on the implementation period. It stipulates that countries that had not been using these measures earlier (because poor countries do not have the luxury to do so) are prohibited from using these measures beyond the de minimis level in the future. This is unfair in the sense that countries that have been distorting the market since before are allowed to continue distorting it up to a substantial extent, whereas those that had refrained from doing so in the past are totally prohibited from using these measures in the future. Still worse, in the process of tariffication, several developed countries have kept the tariffs in their schedules very high. This will hinder import prospects of Ethiopia in the future.
Implications of the AoA in the Context of National Interest of Ethiopia

- Least Developed countries (LDCs) are not required to undertake reduction commitments in agricultural market access, domestic support and export subsidies although they have to bind their tariffs on agricultural imports.
- The possible negative effects of the implementation of the reform program on LDCs and net food importing developing countries are recognized.
- Whatever special provision stipulated on the Agreement for developing countries is automatically available for LDCs.

Experience of Implementation of the AoA

- Developed countries have kept their tariffs very high in respect of several agricultural products as they have taken very high tariff equivalents of their non-tariff import restraints. For example:
  - Japan has kept its tariff levels for wheat, wheat products and barley more than 350%;
  - Canada applies tariff of more than 350% for butter and more than 230% for cheese and eggs;
  - USA applies more than 240% for sugar; and
  - EU applies more than 210% for beef.

If we consider tariff escalation, our processed agricultural products face escalated tariffs at every higher stage of processing. This is potentially very detrimental for the export of agricultural products of Ethiopia.

- As mentioned before, there is recognition of the problems of the LDCs and the net food-importing developing countries regarding additional burden on them caused by agricultural liberalization. However, there is no specific remedial action mentioned in the Agreement. Consequently, these countries have remained with their problems.

- Although LDCs are exempt from any reduction commitments regarding domestic support and export subsidy, the Agreement does not recognize the fact that all of them do not have the luxury to support their agriculture, and the small subsidies they had applied previously have been prohibited due to conditionalities of the IMF and The World Bank. Therefore, without strong backing (technical and financial assistance) the future of Ethiopia's export is at a great risk.
Conclusions

Ethiopia needs to see some improvement in the AoA to make it fair and voluntarily acceptable to it. The following points raise some of these suggested changes from Ethiopia’s perspective.

- Having realized that international trade is governed by the WTO agreements. Ethiopia should unite with other least developed WTO member countries to defend its interest first and foremost by being a member of the organization, and by building its negotiating capacity. It would be better to defend one’s interest from within than from outside.

- Food security and maintenance of agriculture-based livelihoods are major development goals for Ethiopia. Therefore, the following points should be met.
  
  ▪ Nations of the world, especially developed countries, should acknowledge the established principle that food security is a fundamental human right consistent with Article 25 of the 1948 Universal Declaration of Human Rights, and should be treated favorably against all agreements related with food.

  ▪ Negotiations should be initiated toward a global “Food Security Convention” to elevate food security to the top priority within international law as this may enable the Ethiopian government, at a minimum, to implement national food security plans that could exempt staple foods from WTO rules and disciplines; to coordinate an international network of local, national and regional food reserves; and to create mechanisms to support in disputes over food and agricultural policy with other agreements such as the WTO Agreement on Agriculture.

  ▪ Food imports to least developed countries should be exempted from the minimum access provisions.

- The Marrakesh decision on “Measures Concerning the Possible Negative Effects of the Reform Program on Least Developed and Net Food-Importing Developing Countries’ should be more effective and enforceable, (for example, by a fund to which major agricultural product exporting countries should contribute through an assessed compulsory system).

- Since general non-tariff measures in developed countries have already been converted to tariffs, future negotiations on reduction of protection should be focused on tariff peaks and tariff escalation. Considering the very high tariff equivalents of the non-tariff measures in developed countries through
tariffication, there should be a provision in the Agreement for ceiling on the peaks of tariffs.

- Developed countries should substantially reduce their domestic support and export subsidies in absolute levels.
- Least-developed countries should be allowed at all times to grant subsidies to their exporters of agricultural products in order to improve their competitiveness in international markets.

References


Introduction

The Ethiopian economy is characterized by very low capital stock and the absence of heavy manufacturing industries. These conditions have forced the country to depend on foreign trade. The country almost exclusively imports essential development inputs like machinery, equipment, transport and communication facilities, semi-finished goods, raw materials and a substantial amount of consumer goods including food. Improvement of agricultural performance and much of the development of other sectors of the economy tend to highly depend on the availability and proper use of these imports, which require allocation of a large sum of foreign exchange resources.

At the same time, the limited capacity of the country to earn foreign exchanges necessary for financing required imports has been one of the major constraints on the pace of the economic growth and development of the country (La-Anyane, 1985).

The sources of foreign exchange can be broken down into exports and foreign capital inflows. Understandably, foreign capital inflows cannot be relied upon to provide the required amount of foreign exchange for economic, social and political reasons. Moreover, foreign capital inflows, if not in the form of grants, mean some burden in the future as they bring about serious foreign indebtedness and difficulties of balance of payments. It is, therefore, mainly through exports that Ethiopia can freely obtain valuable foreign exchange earnings.

Efforts towards sustained export growth symbolize an essential component in a strategy designed to achieve better economic performance. In relation to this view, Faini (1994) states “In the face of a binding current account constraint and to the extent that possibilities of import substitution are severely limited, the resumptions or promotion of growth can often only be achieved through faster export expansion.” Cognizant of this, Ethiopia has been making great efforts to increase its exports. However, efforts designed to expand and ensure greater stability of export earnings demand farsighted measures. These measures, in turn, require careful and objective assessment of past and current export performances of the country as well as the future trends in both the present and potential export commodities (Maizels, 1971). More specifically, they require accurate information on factors influencing the...
export performance of the country. Accordingly, this paper looked into factors, which determine the export performance of Ethiopia.

**Econometric Model**

Information on the role of export price in determining export performance of a developing country is very important. The orthodoxy of economics says that export supply should respond positively to changes in relative price. The level of export performance can then be expressed as a function of export price or relative export price (Goldstein and Khan, 1978; Balassa, 1990). The export supply of a least developed country is expected to respond to changes in relative incentives to traded goods versus non-traded goods. A cross-country analysis of Sub-Saharan African countries shows that real exchange rate has highly significant positive effect on export supply (Balassa, 1990). Accordingly, export supply could be expressed as a function of real exchange rate, possibly in lags.

Real national output is another important determinant of export supply (Goldstein and Khan, 1978; Milner and Greenaway, 1979; Balassa, 1990). It is usually used as a proxy for domestic capacity. Furthermore, foreign aid inflows are said to influence the level of exports directly through export promotion activities. If a significant part of foreign aid is invested in the export sector, there could be increase in the export of the country. Foreign aid could also affect the level of exports indirectly through the appreciation of real exchange rate (White, 1992). Large aid inflows may push up the exchange rate (resulting in overvalued exchange rate) and make exports less competitive (Mosley, 1988; White, 1992). To study the impact of foreign aid on export supply, the variable should be added to the export supply equation. It could be more informative and useful to split the aid variable into its components, such as foreign grants and loans.

The principal international factor causing a shift in export performance of a country is the change in terms of trade (Brown and Hogendorn, 1994). As the price of imports increases relative to exports, a given amount of exports purchase fewer imports—implying that the economy has fewer real goods and services than it had before. If the country wants to maintain previous quantity of imports, it has to export more (Brown and Hogendorn, 1994). This implies inverse relationship between terms of trade and export performance in a developing country.

The level of national product traded internationally depends on the size of a country as measured, for example, by population. Increase in population is expected to promote domestic consumption of potentially exportable commodities with an adverse effect on export performance. This suggests the inclusion of some measure of the population variable.
Factors influencing the export performance of Ethiopia

All the previous explanations could then be summarized using the following econometric export performance equation.

\[
\text{EXPORTS}_t = f(\text{XPRICE}_t, \text{RERARTE}_t, \text{GDPD}_t, \text{FGRANTS}_t, \text{FLOANS}_t, \text{TOT}_t, \text{POP}_t),
\]

where: \(\text{EXPORTS}_t\) is export earnings, \(\text{XPRICE}_t\) is export price, \(\text{RERARTE}_t\) is real exchange rate, \(\text{GDPD}_t\) is gross domestic product, \(\text{FGRANTS}_t\) is foreign aid grants, \(\text{FLOANS}_t\) is foreign aid loans, \(\text{TOT}_t\) is terms of trade, \(\text{POP}_t\) is the population variable and the subscript \(t\) refers to \(t^{th}\) year.

The dependent variable (\(\text{EXPORTS}_t\)) was nominal export earnings from goods and services deflated by export price index with 1987 as a base year. The explanatory variables were \(\text{XPRICE}_t\), the export price index, and \(\text{GDPD}_t\) the nominal gross domestic product deflated by GDP deflator (1987=100). \(\text{POP}_t\) is total annual population in millions; \(\text{FLOANS}_t\) and \(\text{FGRANTS}_t\) are nominal values of foreign loans and foreign grants, respectively, both deflated using import price index (1987=100). \(\text{TOT}_t\) is the terms of trade expressed as the percentage ratio of export price indices to import price indices. The real exchange rate (\(\text{RERARTE}_t\)) was represented by a proxy that was defined as nominal exchange rate divided by multiples of domestic consumer price index of Ethiopia by consumer price index of the US.

The econometric export performance model could be an analytically powerful tool to test alternative hypotheses and derive policy implications. Given the availability of data, the model could be estimated for different categories of exports, like exports of goods and services, merchandise exports, agricultural exports, coffee exports, and the net export ratio (export-import) or GDP. The model was estimated for aggregate exports although it focused on agricultural commodities due to lack of information on some of the key explanatory variables for the subsets of total exports.

Export Structure of Ethiopia

Agricultural products have exclusively dominated the commodity exports of Ethiopia, just as the economy itself. Agricultural commodities account for more than 90% of the export proceeds of the country (MEDaC, 1999). Furthermore, the exports of the country have been highly dependent on a few products of which coffee accounts for (70%) of the agricultural export and 60% of the total export proceeds (Ibid). MEDaC (1999) also indicated that hides and skins and chat distantly follow as the second and third important export items accounting on average for 12% and 7% of total export earnings, respectively. Export of hides and skins had successively increased that it reached 21% of total exports in 1991/92. Since 1992, however, the
export of hides and skins consistently declined (Ibid). Pulses and oilseeds had been the third export items prior to the beginning of the 1990's; but recently, this export status has been taken over by chat (Ibid). Undoubtedly, this export structure subjects the external sector of the country to adverse shocks (Ibid).

During the late 1980s and early 1990s, export earnings clearly declined—further compromising the performance of the external sector. Export earnings during this period had declined so drastically that they financed only 17% of imports in 1991/92, which was an all-time-low compared to the 43% level in 1988/89 (MEDaC, 1999). In monetary terms, export earnings had declined from 443.6 million USD in 1988/89 to 192 million USD in 1991/92.

Despite the crucial importance of agricultural exports in generating foreign exchange, Ethiopia's share in agricultural exports of the world, in value terms, was 0.23% per year in the 1960s (Teressa, 1997). This share fell to 0.20% in the 1970s, and 0.15% in the 1980s (Ibid). At the beginning of the 1990s, the country's share dropped rapidly to only 0.05% per year.

Following the 140% devaluation of the Birr from Birr 2.07 per USD to Birr 5 per USD in October 1992, the country established a foreign exchange auction system in May 1993. This has led to the narrowing of the gap between the auction and the parallel rates to less than 10% (World Bank, 1995). The country has also made many reforms in the foreign trade sector and adopted many other structural adjustment measures. The introduction of these reforms seems to have a positive impact on export performance.

In the years following the reform, export earnings continuously revived—reaching a level of 265 million USD in 1992/93, and 489 million USD in 1994/95, when capacity of export earnings to finance imports reached about 57.87% (MEDaC, 1999). After some decline to 458 million USD in 1995/96, export earnings rose to 605 million USD in 1996/97 and reached 616 million USD in 1997/98 (Ibid). Between 1991/92 and 1997/98, the exports of the country registered an average growth rate of 26.3% per year—financing about 50% of the annual import bill (Ibid). In a nutshell, the performance of export earnings since 1992/93 has been rising, but still a lot remains to be done as exports fall half–short of financing the import bill (Ibid).

**Results**

The equation of the empirical export function devised to examine the various determinants of the export performance of Ethiopia was quite satisfactorily judged.

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1991/92 is not normal year
Factors influencing the export performance of Ethiopia from the viewpoint of the usual test statistics (D-W test, t-statistics and F-test). The inspection of each explanatory variable showed that real gross domestic product (GDP) assumed significantly positive coefficient (Table 1). This suggests that the variable had a favourable influence on the export performance of the country. With increase in the overall domestic economic performance, the export sector also did better during the sample period.

Table 1. Factors influencing the export performance of Ethiopia, 1968-1992

<table>
<thead>
<tr>
<th>Exp. Variable</th>
<th>B</th>
<th>SEB</th>
<th>Beta</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1786.1</td>
<td>66.9</td>
<td>0.466</td>
<td>66.9</td>
</tr>
<tr>
<td>FLOANS&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.466</td>
<td>0.249</td>
<td>0.445</td>
<td>1.868</td>
</tr>
<tr>
<td>RERATE&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-112.3</td>
<td>61.5</td>
<td>-0.177</td>
<td>-1.823</td>
</tr>
<tr>
<td>FGRANTS&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.874</td>
<td>0.479</td>
<td>0.251</td>
<td>1.826</td>
</tr>
<tr>
<td>TOT&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-2.201</td>
<td>1.085</td>
<td>-0.355</td>
<td>-2.028</td>
</tr>
<tr>
<td>GDPD&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.067</td>
<td>0.032</td>
<td>0.280</td>
<td>2.109</td>
</tr>
<tr>
<td>XPRICE&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-4.405</td>
<td>1.377</td>
<td>-0.588</td>
<td>-3.199</td>
</tr>
<tr>
<td>POP&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-0.019</td>
<td>0.010</td>
<td>-0.461</td>
<td>-1.840</td>
</tr>
<tr>
<td>Dependent Variable EXPORT&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

R<sup>2</sup> = 0.92, Adj R<sup>2</sup> = 0.91, SE = 8.3, F(7,16) = 35.7, Significant at 1%; ** Significant at 5%; and * Significant at 10% level.

However, the examination of the effect of the non-export GDP (NXGDPD<sub>i</sub>) on export performance showed a positive but insignificant coefficient (Table 2).

Table 2. Factors influencing the export performance of Ethiopia, 1968-1992

<table>
<thead>
<tr>
<th>Exp. Variable</th>
<th>B</th>
<th>SEB</th>
<th>Beta</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2164.6</td>
<td>657.4</td>
<td>-</td>
<td>3.293</td>
</tr>
<tr>
<td>FLOANS&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.566</td>
<td>0.256</td>
<td>0.540</td>
<td>2.209</td>
</tr>
<tr>
<td>RERATE&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-130.3</td>
<td>64.0</td>
<td>-0.205</td>
<td>-2.033</td>
</tr>
<tr>
<td>FGRANTS&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.784</td>
<td>0.523</td>
<td>0.256</td>
<td>1.500</td>
</tr>
<tr>
<td>TOT&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-2.608</td>
<td>1.154</td>
<td>-0.397</td>
<td>-2.339</td>
</tr>
<tr>
<td>NXGDPD&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.055</td>
<td>0.036</td>
<td>0.213</td>
<td>1.460</td>
</tr>
<tr>
<td>XPRICE&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-4.628</td>
<td>1.472</td>
<td>-0.618</td>
<td>-3.144</td>
</tr>
<tr>
<td>POP&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-0.021</td>
<td>0.011</td>
<td>-0.522</td>
<td>-1.988</td>
</tr>
</tbody>
</table>

R<sup>2</sup> = 0.93, Adj R<sup>2</sup> = 0.90, SE = 87.95, F(7,16) = 31.4, Significant at 1%; ** Significant at 5%; and * Significant at 10% level.

n = 24; D-W = 1.82; *** Significant at 1%; ** Significant at 5%; and * Significant at 10% level.
The coefficient of foreign loans (FLOANS) was significantly different from zero at 10% level and had a positive sign. This indicates that the country's export performance has increased with the level of foreign loan inflows. This could be because some of the foreign loans might have been invested in the export sector and possibly facilitated both the production and marketing of export commodities.

The coefficient of foreign grants (FGRANTS) was found to be significant at 10% level and assumed a positive sign, suggesting that the export performance of the country has also increased with the level of foreign grants. This implies that as foreign grants increased, the country tended to use some of these as fungible resources to promote its export sector. However, the variable assumed a non-significant positive coefficient when it was entered with the non-export gross domestic product (Table 2).

The export price variable (XPRICE) assumed a significant negative coefficient. This is contrary to the theoretical expectation. However, the result indicated that when export prices fell, the country tended to generate more foreign exchanges by increasing the volume of its exports. The country tended to export the quantity that offsets, to some degree, the fall in export prices. Likewise, when export prices significantly increased; the country could not exploit the advantage due to inflexible supply of the export products.

The estimated coefficient of the terms of trade (TOT) was significantly negative (Table 1). This inverse proportionality suggests that with the deterioration in its terms of trade, the country has to export more to maintain its import quantity to previous level. The coefficient of the real exchange rate (RERATE) was negative and significant at 10 percent level—indicating that the real exchange rate had an adverse effect on the country's export performance. This finding seems to confirm the argument that an overvalued real exchange rate discourages exports of a developing country by making them less competitive; and it also devalues domestic exportable producers of the incentives required to supply more. The population variable assumed a significant negative coefficient—implying that export performance declines as domestic consumption of exportables increases.

Conclusions and Policy Implications

The following major conclusions and policy implications could be drawn from this analysis. Total population significantly influenced export performance. This implies that excessive increase in population promotes domestic consumption of exportable commodities. There is, therefore, a serious need to increase domestic food and agricultural production or to reduce the growth rate of the population.
Foreign aid, particularly foreign loans, had a positive effect on the export performance of the country. This may indicate that a significant part of the foreign aid had been allocated for the advancement of the export sub-sector. There is, thus, a strong need to allocate more of the aid resource to the export sub-sector to improve the efficiency with which it is used to further enhance the contribution of foreign aid in the promotion of the export sub-sector of the country.

The inverse relationship between export price and export performance reveals that whenever export prices decline, the country attempts to earn more foreign exchange by increasing the quantity of exports. This strategy requires concerted efforts to substantially increase the production and productivity of the export sub-sector of the country. Besides, due attention should be given to export diversification.

The level of aggregate domestic output was found to be an important determinant of export performance, but not the level of non-export aggregate output. This indicates that higher domestic capacity promotes export performance and should receive due consideration. The real exchange rate was expected to adversely affect the export performance of the country given that the domestic currency was overvalued during the study period. But, the result supports the devaluation policy, which the country has already implemented. Nevertheless, to have stronger evidence on the issue, it is essential to examine the effect of real exchange rate on export performance after the devaluation of the domestic currency.

Finally, there are some limitations associated with the analysis of this paper. First, the data was of relatively short period. Second, the analysis assumed a unidirectional causality from the independent variables to export performance in which the estimates might suffer from simultaneity bias. Third, during most of the study period, the economic activities in the country were run under command economic system. This could violate the assumption that producers and exporters operated under perfect market conditions and tried to maximize the utility which the econometric modeling takes for granted. Fourth, many things, mainly policy changes, have taken place in the country since the last year in the data set used for the analysis of this paper. This might preclude the usefulness of some of the lesson drawn. For these reasons, the conclusions and policy implications drawn should be taken cautiously. Further analysis of the effects of the explanatory variables on the export performance of the country after market liberalization and economic reforms would be a highly useful research area from policy perspective.


References


ANALYSIS OF SOCIAL EFFECTS OF AGRICULTURAL RESTRUCTURING

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Introduction

Economic restructuring is a global process that might occur in different sectors of a nation’s economy. One of the sectors targeted frequently for restructuring, particularly in the third world countries, is the agricultural sector. As a result, changes in food policy that brought about changes in agricultural production, marketing, and consumption have taken place in many developing nations. Since the market-oriented policy led to restructuring in the agricultural sector, food production for domestic consumption has deliberately been dominated by food production for export. These changes in food policy have consequently resulted in shifts in regulation of food production and consumption at household levels.

There is a common argument that agricultural restructuring is based on the assumption that the central elements of the generalized crisis, which many less developed economies face, are problems of agricultural production, food supply, and food insecurity. The Briton Woods Institution reasons out that the poor performance of agricultural export, assumed to have been caused by urban industrial bias and excessive government intervention in the economy, is the most important cause for external debt and economic crisis of developing countries. Thus, focusing on production of agro-industrial and agricultural exports is expected to improve food security, bring sustainable economic growth, and improve the balance of payments of those countries in economic crisis. Developing countries including Ethiopia have, accordingly, undergone agricultural restructuring.

Despite the central role of agriculture in the Ethiopian economy, the performance of the sector has been unsatisfactory. It has been said that the root cause for the poor performance in the sector is distorted macro policy. The implication of such position, therefore, led to the understanding of a need to free the sector from such policy interventions and to allow free competition and market forces to play the roles of price determination. In view of this, the then Transitional Government of Ethiopia, paving the way for the development of a market-driven economy, adopted a wide-ranging Structural Adjustment Program (SAP) in October 1992 with the support of Briton Woods Institutions (TGE.
1992). Through the adoption of restructuring programs, efforts were made to make farm incentives right. The measures outlined in the SAP and which had impact on agriculture were liberalization of agricultural prices, elimination of export taxes, devaluation of the Birr, elimination of export subsidies, and permissions to the private sector to participate in seed and fertilizer marketing.

When the country took initiatives to implement the measures since SAP was launched, there were many challenges and limiting factors for their implementation that it had been difficult to achieve the intended purpose of restructuring. As a result of agricultural restructuring, the agricultural sector of Ethiopia has been facing challenges of not only feeding the growing population but also of producing for export and industrial input.

Agriculture provides much of the food and income requirements of the majority of smallholder Ethiopian farmers. Therefore, any restructuring in the sector has a direct impact on these farmers. Accordingly, though this study was not based on empirical examples, it tried to show how restructuring may exacerbate food insecurity and inequality.

Furthermore, as women play a dominant role in agricultural production, any restructuring in the agricultural sector might affect gender relations and the nature of women’s involvement in agricultural production systems. In the current process of restructuring, both sexes may have to work harder outside home to meet ends, but what worsens things for women is that they may have to work harder at home also. Due to restructuring, it has been noted that women are highly involved in the production of both food crops for consumption and cash crops for sale in many African countries. However, this involvement has hardly brought benefits to them. Instead, they are in conditions where they are supposed to absorb shocks of any crisis within the household that might result from the whole restructuring process.

The aim of this paper was to stimulate discussion on the possible social impacts of restructuring in the agricultural sector by critically analyzing the agricultural policy that is currently dominant in many developing nations of the world. This will hopefully enable us to come up with a vision for the Ethiopian agricultural sector.

**Delinquency of Economic Restructuring**

Economic restructuring can be referred to as a measure a country takes in order to improve the performance of its economy. It is a current global phenomenon and a fundamental feature of the world economy occurring in many different ways. The process of restructuring includes liberalization and regulation of trade, transformation of the international system of production, inter-connection of
financial markets and transition to market-driven economies (Moghadam, 1995). Marketization and structural adjustment programs are, therefore, manifestations of the process of global economic restructuring.

SAP, which refers to a set of policies propelled by the IMF and the World Bank with the explicit aim of opening up third world countries to world market competition, is said to bring them out of an economic crisis. This economic crisis arises when a country spends more than what it earns (Messkoub, 1992).

The cure for such economic crisis, again in view of the IMF and the World Bank, is comprehensive economic reform policy, the package of which consists of two sub policies on which states should act upon. One of the two policies argues that states of given nations should cut their expenditure (especially social provisions) and raise their revenue by changing their mode of operation and charging users. The other policy suggests that states should alter the way they intervene in the markets (to change their organization or their pricing behavior) in order to create a favorable condition for investment and growth. Here, the main slogans are ‘getting prices right’ and ‘deregulation’ which mean the economy should be guided by the world market and the state should consecutively dismantle artificial barriers. In order to do this, the main policy measures are devaluation, raising interest rates and abolishing subsidies and price controls that distort prices (Messkoub, 1992).

Economic restructuring, as believed to do so, may increase the overall output or GNP of a nation. For instance in Ethiopia, the GNP has improved after the adoption of SAPs (Hamza, 1995; Ibrahim, 1995). However, using increases in overall output as measure of success and progress, given the extent of poverty, inequality and hunger in the same country undergoing restructuring, is indeed an oversight. This is because, looking at the increase in GNP alone as a measure of success without considering other measures such as equitable income distribution, increased employment, increased real wages, and access to resources will jeopardize the perspective from which development should be seen. Hence under these circumstances, measures of success conceal more than they reveal. Therefore they cannot be used as such.

Most third world countries are getting poorer and more heavily indebted than before restructuring started, and poor people seem to suffer the consequence through increased unemployment and reduced real wages. This has made these countries more dependent on western donors than they were before, which actually kept them go on as long as the country respects its commitment to adjustment (Raikes, 1997). Of course, adjustment or restructuring should not take the blame for all the ills in the economy of a country undergoing restructuring. Some countries had already started to lower the quality of life even before, but restructuring seems to have hastened the process. The claimed result of restructuring being debt reduction, in reality only few third world countries have been able to pay the full value of debt service with much sacrifice. Others have their debt rescheduled as the countries adhere to adjustment.
agreements, and still for others their indebtedness as a proportion of GNP has not fallen but has probably increased after restructuring (Messkoub, 1992). So, how does this relate to success of restructuring?

Agricultural Restructuring and its Possible Social Impacts

In countries that have undergone agricultural restructuring, the support from their existing states for production of basic food production for local markets is cut back. On the contrary, there is increase in state support for investment in agro-industrial and agricultural exports for world market. In this context, new forms of agricultural production relations have emerged. Accordingly, the need for production flexibility has increased with the rise of specialization and the growing of instability in world trade. Furthermore, contract farming and new input technologies have become important for agri-business operations (Raikes, 1997).

Here, it is possible to claim that production of food crops for domestic market is influenced due to change in food policy. This is due to first, the cut down in state support including subsidized access to credit, technical assistance, market co-ordination and price stabilization which were existed before the process of restructuring; and secondly because of the growing competition from cheap imported grain and processed foods introduced due to opening of the market.

According to Woodward (1992), one of the central principles in the current approach of restructuring in the agricultural sector is that of the “Benefits of trade” that a household or a national economy should produce whatever it can produce most efficiently, sell its output to others and use the proceeds to buy the goods it needs. This implies commercialization of agriculture at household level (shifting from subsistence production to production for the market and increased export orientation at the national level). But this pressure on cash crops and negligence of food crops has a negative impact on the nation undergoing economic restructuring.

The assumption for restructuring in the agricultural sector is that ‘countries most successful in increasing agricultural exports will have increased production of food crop. Hence, more emphasis on export production will benefit the farmer as well as the nation.’ But, as restructuring countries seek to increase their export of the same narrow range of products, increased supply of the same commodity in international markets depresses their price. Restructuring sees increasing exports as beneficial provided that the exports generate foreign exchange which can be used to pay for food or other imports. But, viewed from the viewpoint of restructuring countries, production for the domestic market is reduced and the
gain in terms of import capacity is much smaller. Therefore, increasing agricultural exports may reduce availability of food and thus, national food security (Raikes, 1997).

Moreover, the volume of agricultural exports can be increased, without reducing food production, only if total agricultural output is increased. This in turn requires an increase in the productive resources used in agriculture. Some increase in production may be possible by increasing the use of land and labor in some cases, but in most cases, land and labor are already used very intensively. Hence, the other alternative is increasing the use of capital, e.g. tools or inputs like fertilizer or changes in production techniques. This alternative, however, also tends to be discouraged by cuts in credit subsidies, increases in prices of imported inputs and limited technical advise which makes things impossible (Woodward, 1992).

Generally, this suggests that the promotion of agricultural exports, which is the current food policy for countries undergoing restructuring, may have a negative consequence on the producer unless there is a direct support for producers as an instrument of restructuring in the agricultural sector. This generalization is not universal, though.

The other failure of adjustment is its lack of gender sensitivity. With reference to the feminist writer Sparr (1994), when talking about adjustment, two points are worth mentioning to understand its gender specific effect. These are the monetisation approach and the market presuppositions of adjustment. The monetisation approach, also known as commoditization, refers to change in the emphasis towards cash-oriented activities. The approach affects women because it doesn’t consider the fact that, in some countries, women’s independent control on money, ownership over property, and paid employment might be restricted due to different factors like customs and legal systems. Hence, due to this lack of access to resource and poor bargaining power of women in decision-making, commoditization hardly brings benefits to women.

Similarly, market presuppositions have a gender-specific effect. This is because, the assumption that women’s unpaid domestic work is flexible and free for market is adding burden to women. On the contrary, women in many countries provide products, labor, and service as part of family obligations, responsibilities, and mutual aid in the household. Hence, women’s labor is not freely available to be dictated by market indicators as restructuring policy suggests so. This shows that, what happens inside the household in terms of gender composition and power dynamics has an effect on women’s labor and because women are supposed to undertake both the in-house and the out side work, adjustment raises the unpaid work burden of women in the household. The case is still more worsened by the cut back of government expenditure on public services, higher prices for basic necessities, and greater job insecurities, which are the results of the policies of adjustment. In relation to this, Moser cited in Spaar (1994) argues
that the trend in the time spent by women in reproductive activities is decreasing from time to time since adjustment because of other demands on their time for the provision of income-generating and basic needs. Yet, this does not mean that women will be free, it means women will be overstretched.

As a result of changes in the agricultural policy, the life of rural women in many third world countries has become more difficult. This could be explained by considering different factors.

**In-field burden on rural women**

Change in the food policy affects the division of labor and the distribution of income in agriculture between women and men. Types of export crops grown determine the labor division in the field because women grow some cash crops. The so-called ‘Male crop’ and ‘female crop’ are contextual and no clear dichotomy exists between men’s crop and women’s crop, especially in countries like Ethiopia. Therefore, market liberalization in agriculture benefits women because they are still engaged in the production of the cash crop on top of food crops, which is additional burden on women’s labor. Yet, they don’t have control over the income they earn from cash cropping (Woodward, 1992).

**Shortage of time available to the household**

As a result of the changes in food policy, women are supposed to work for more hours out of home. These changes in food policy did not regard the provision of services by women for their own household, i.e. child care, fetching water, food preparation in home, health care, domestic cleaning, etc., but these services are critical to the household’s welfare (Spaar, 1994).

**Less food security and health status**

The least emphasis given to the production of food crops increases prices of food items. The shortage of time available for nutrition-related activities (feeding of young children and food preparation) has got a serious impact on food security, particularly for poor households. This, at the same time, has high impact on the health status of the family, and adds further burden to women in the household (Woodward, 1992).
Analysis of social effects of agricultural restructuring

particularly for poor households. This, at the same time, has high impact on the health status of the family, and adds further burden to women in the household (Woodward, 1992).

Vulnerability to future shocks

When a household faces a reduction of real income as a result of economic restructuring, women will try to moderate the impact on consumption and nutritional levels through various coping mechanisms like changing the composition of consumption; working for long hours and more intensively, migrating, and changing occupation. But using this strategy increases the vulnerability of the household’s food security and subjects women to future shocks (Woodward, 1992).

In summary, there are causal relationships between economic restructuring, changing food policy, and its impact on women and children in the household.

Fig. 1. The causal relationships between restructuring policies and household welfare

Conclusions
markets, which in many ways can worsen the impact on the poor peasants. Therefore, state interventions are important to take care of provision of public services to the poor and vulnerable who otherwise will be exposed to the competition of private institutions which in most cases respond to the needs of those who can afford their services. This, however, is in no way to promote government monopoly as the only panacea, but to make government actions and policies more responsive to public needs, particularly of the poor and vulnerable.

Besides, restructuring programs tend to neglect the poor and most vulnerable section of the society that requires government protection. These programs focused more on macro economic issues and relied heavily on the assumption of trickle-down. Moreover, SAPs are, in most cases, impositions upon developing countries by the IMF and World Bank and are top down, hence lacking, most of the time, responsive nature to public needs (Messkoub, 1992). This in turn draws on the importance of a democratic process that increases the participation of those affected by the state policy. It is through such democratic mechanisms that national policy to adjust the economy to outside shocks and reforms in order to correct past mistakes should emerge. In fact, the Ethiopian government argues that restructuring is its own making rather than that of IMF or World Bank. Nevertheless, the participation of different bodies of the society seems missing.

The adjustment has been criticized for its asymmetric burden on the poor. Meanwhile, approaches that aim at mitigating the cost of adjustment have also been sought. The question here is, what kind of alternative policy perspectives to put forward to tackle the economic and social problems of countries like Ethiopia where the restructuring process did not help improve the living standard of the poor and vulnerable section of the society.

It is true that developing countries need some sort of economic change; but how? when? and by who? are the underlying questions. One thing I can say for sure is that long-term investment in people is essential for the development of a country and this cannot be achieved by short-term protection nor will market mechanisms alone achieve it. Instead, it needs state intervention.

One of the major consequences of global restructuring is the erosion of the capacity of states to govern and control their national economies. To reverse this declining role of states, therefore, emphasis on states as national democratic institutions must be reaffirmed. Despite the fact that international institutions, NGOs and the private sector have a role to play in the overall economy, the state should be the primary target of advocacy. We should continue to focus on the state but recognize its limitations—that is the dangers of bureaucratization and over reliance. Nonetheless, it is still important that the State takes the responsibility of regulation and control. Even currently, where the role of the private sector and NGO’s is highly advocated, the state is responsible for making them accountable. States should become more democrat and responsive in their design, implementation and evaluation of policies to the needs of the poor.
vulnerable peasants. They also should undertake systematic monitoring on the impacts of the decline in public expenditure as well as privatization (Elson, 1994; Kerr, 1994).

The question of women, I suggest, should also be addressed through state intervention. In doing so, the following points need more consideration.

- The state should take a leading role in ensuring that any change in policy does not have any discriminatory impact on women.
- State policy makers should not treat women as a homogenous category, but should be aware of the existence of differences among women of different socioeconomic status.
- Much effort should be exerted in addressing the needs of the poor category of women (Elson, 1994; Kerr, 1994).

References


Introduction

Agriculture plays a dominant role in Ethiopian economy. It contributes 50% of the GDP, and generates employment for over 85% of the population (MEDaC, 1999). It also contributes about 90% of the export earnings of the country out of which coffee accounts for 62% followed by skins and hides (Ibid). The overall trend of export indicates that two agricultural commodities dominate the Ethiopian export trade.

The commodity composition of the exports of Ethiopia has stayed rigid for a long time (Tadesse, 1995). The country is heavily dependent on primary commodity exports for its foreign exchange earnings. It doesn’t have diverse export goods. This trend seems to continue in the future unless adjustments are made on the export structure of the country which has a recent performance of 59% from coffee, 2% from pulses, 13% from chat, 8% from hides and skins, and 6% from oil seeds (Customs Authority, 2000). Such structure of external trade has got its limitations. First, annual price fluctuations of agricultural commodity exports have been substantial. Second, the agricultural sector can be highly affected by weather variations and natural calamities. Thirdly, the response for supply of the commodities in the world market is less elastic. These factors have directly or indirectly contributed to instability of the export revenues of Ethiopia. Fluctuations in external markets and a set back in volume of export affect export earnings.

Given the drawbacks in export and the corresponding loss in the export revenue, imports in Ethiopia could not be sustained indefinitely (Tadesse, 1996). The outcome of this change is the scarcity of foreign exchange and imports, which may have a pervasive effect on other sectors of the economy. Generally, the demand of trading partners of Ethiopia remains to be the single important factor in determining the export of the country. The international trade for such items has not been favorable particularly since the 1970s. Structural and technological
factors play important roles behind the decline in the world demand for primary commodities.

Some of the international markets are already saturated for some products (e.g. coffee and tea) that Ethiopia has to compete technologically and in other standards strive to expand its market share of traditional exports. Under such circumstances, even a policy stimulus for a dynamic exchange rate may not be a lasting solution as the involvement of many exporting countries will eventually depress the export prices of products such as coffee. In this context, however, Ethiopia has an option to diversify its production and exports. Diversification in this sense requires comparative advantages and competitiveness in the production of agricultural products supported by research and institutional innovations. Accordingly, this study attempted to investigate the issue of diversification in relation to comparative advantages and competitiveness for export of chickpea and lentil among pulse crops.

Methodology

Data sources

The study was based on both primary and secondary data. The survey results of 1996/97 at the household level whose products were chickpea and lentil were analyzed. The data were collected from the major pulse growing Vertisol areas. The data collected included technical and economic aspects. Detailed data collection included inputs-outputs (labor, number of oxen, land holding, fertilizer use, grain yield, straw yield) and the corresponding values. Key factors considered in on-farm analysis were input and output data collected from on-farm trials based on farmers' actual operations. The data set were costs of farm input, labor use, land, fertilizer, oxen, and yield (grain and straw) with corresponding values. In addition, off-farm costs were added in the form of field costs that included transport, collection, storage and handling costs.

Method of analysis

Marginal analysis and Policy Analysis Matrix (PAM) were employed to see the economic performance and competitiveness of chickpea and lentil. The PAM used the concept of profit as its main point of analysis and the cost and return structures were presented in the form of a matrix which allows easy presentation and interpretation of results. The four indicators of PAM used in this paper were
Nominal Protection Coefficients (NPCs), Domestic Resource Cost (DRC), Effective Protection Coefficients (EPCs) and both financial and social profitability. Simple descriptive statistics (ratio, mean, and standard deviation) were employed for the analysis of the data.

Based on PAM approach, P cost and returns were disaggregated both at market and social values and the Domestic Resource Costs (DRC) provided efficiency of domestic resource. DRC is an indicator of the total cost of production when prices are adjusted for taxes, subsidies and market imperfections and resources valued at their opportunity costs. In valuing social and tradable inputs, their opportunity cost was estimated by the world or border price which is CIF price adjusted for transport and administrative costs. For non-tradable inputs including some of the domestic factors of production, the standard conversion factor (SCF) was employed to value the respective opportunity costs. The DRC approach is useful in determining the potential contribution of a given technology in a given farming system (Byerlee and Longmire, 1986). An activity is said to have a comparative advantage when the DRC ratio is between zero and one.

Results and Discussion

Production

Ethiopia is one of the major producers of pulses in Africa producing chickpea and lentil under rainfed conditions. Chickpea and lentil are cultivated mainly on Vertisols on altitudes of 1400-2400m. The crops are mainly grown in monoculture except as mixed crops with sorghum, in Gondar and Gojam; and with maize and sorghum in Hararghe (Million and Beniwal, 1988). Use of improved cultivars is limited mainly for unavailability and high cost of seeds.

The subsistence farming system uses no fertilizer for maintenance of soil fertility for these crops. The depleted farmland is normally fallowed. However, due to population pressure and limited land size, this practice is not always possible. Thus, lentil and chickpea are very desirable to improve soil fertility. These pulses can also be grown in areas where other cereals cannot grow.

Marketing

Availability of the major food legumes in general and lentil and chickpea in particular has never been in surplus in the subsistence farming communities of Ethiopia. There is, however, limited marketing of pulses. The marketing of
chickpea and lentil has got two facets, i.e. domestic and export. Internal markets seriously compete with the external ones. Although faba bean is the most important export food legume, lentil and chickpea are also potential export food legumes. Marketing of lentil and chickpea has traditionally evolved in a village as well as in urban market economy for many years, like any cereals (Pankrust, 1961).

During the Dergue regime, private traders and the then Agricultural Marketing Corporation (AMC) handled marketing of chickpea and lentil, while the Ethiopian Oilseeds and Pulses Export Corporation (EOPEC) handled export market. AMC is now renamed as the Ethiopian Grain Trade Enterprise (EGTE), and purchases pulses in the open market by competing with private traders. The government established the EOPEC for exporting oilseeds and pulses like chickpea and lentil. There were often conflicts of tasks and functions between AMC and EOPEC owing to lack of a clear policy framework at the time. EOPEC, however, receives substantial export subsidy though it purchases at lower fixed prices. Hence private traders could not compete with EOPEC, aggravating inefficiency in marketing.

The domestic prices of chickpea and lentil are often related to the season of sale, the distance of flow and the size of the market. Chickpea prices fall rapidly in February to March immediately after harvest and then start to increase gradually from May to August. Similarly, lentil prices fall in October right after harvest and then continue to increase after February.

Export market
The proportion of export market for pulses in general and chickpea and lentil in particular is insignificant. The share of pulses was 4.38% in 1982, 0.93% in 1991, and 2% in 2000 (Customs Authority, 2000). This indicates that although Ethiopia is one of the major producers of pulses in Africa, it could not increase the pulse export for various reasons.

When we examine individual products, the share of lentil and chickpea in the total export is declining recently (Table 1). The share of lentil among the pulse groups was 0.23 in 1982 and that of chickpea was 0.21. After showing an increasing tendency until 1988 (with some years of abrupt fluctuation), it continuously declined and even was nil in some years.

The major market partners and importers were Germany, Djoubti, France, Mauritius, Yemen, Saudi Arabia, and very recently Israel. The main reasons for the lower export performance were decline in production caused by drought and other natural calamities, and increased domestic consumption, which reduced substantially the marketable surplus. In some instances the higher domestic price of pulses compared with international price tended to reduce competitiveness of pulses and increased illegal trade in some border areas (Hailu et al., 1994).
Table 1. Lentil and chickpea exports and earnings of Ethiopia

<table>
<thead>
<tr>
<th>Year</th>
<th>Lentil</th>
<th></th>
<th>Chickpea</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exports ('000)</td>
<td>Earnings ('000 USD)</td>
<td>Exports ('000)</td>
<td>Earnings ('000 USD)</td>
</tr>
<tr>
<td>1982</td>
<td>0.05</td>
<td>20.53</td>
<td>0.50</td>
<td>18.30</td>
</tr>
<tr>
<td>1983</td>
<td>2.26</td>
<td>897.13</td>
<td>0.85</td>
<td>221.55</td>
</tr>
<tr>
<td>1984</td>
<td>3.50</td>
<td>1320.93</td>
<td>0.21</td>
<td>99.05</td>
</tr>
<tr>
<td>1985</td>
<td>1.21</td>
<td>559.29</td>
<td>0.01</td>
<td>3.72</td>
</tr>
<tr>
<td>1986</td>
<td>0.21</td>
<td>13.92</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td>1987</td>
<td>1.63</td>
<td>986.00</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td>1988</td>
<td>0.29</td>
<td>162.58</td>
<td>0.03</td>
<td>12.24</td>
</tr>
<tr>
<td>1989</td>
<td>-</td>
<td>-</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td>1990</td>
<td>0.13</td>
<td>69.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1991</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1992</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1993</td>
<td>0.70</td>
<td>233.00</td>
<td>0.12</td>
<td>30.00</td>
</tr>
<tr>
<td>1994</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1995</td>
<td>0.44</td>
<td>123.38</td>
<td>0.50</td>
<td>165.00</td>
</tr>
<tr>
<td>1996</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Customs Authority, 1982-1996a

The supply side constraints can also be seen in terms of lack of sufficient improved varieties or technologies, which boost production. Technologies generated for both chickpea and lentil are not adequately transferred to the farmers. They are concentrated only in few pocket areas of the country.

**Economic analysis of comparative advantages and incentives for production**

This issue treats whether or not a country like Ethiopia has a future in producing and exporting pulses like chickpea and lentil. It analyzes the comparative advantages of producing lentil and chickpea with less sophisticated methods such as profitability analysis. The marginal rate of return (MRR) or the marginal benefit increment is a suitable criterion to evaluate profitability and viability of improved technologies that were thought to improve productivity and boost production of the crops. In this way, it is possible to calculate the additional returns from additional operational costs (Von Oppen et al., 1986). The profitability analysis on pooled data indicated that the improved package had a higher net benefit at a household level in Ada, Gimbidchu, Shenkora, Tullubolo and Ginchi areas (1991-93) (Table 2). The improved technology performed better than the local variety with a marginal benefit increment of 32%. This shows that farmers would benefit more by using improved varieties than by using the local ones.
Table 2. Economic analysis of improved and local chickpea packages in Ada, Gimbichu, Shenkora, Tullubolo and Ginchi areas, 1991-93

<table>
<thead>
<tr>
<th>Description</th>
<th>Improved Package</th>
<th>Local package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (t/ha)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain</td>
<td>0.992</td>
<td>0.680</td>
</tr>
<tr>
<td>Straw</td>
<td>2.440</td>
<td>1.840</td>
</tr>
<tr>
<td>Adjusted yield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain</td>
<td>0.890</td>
<td>0.600</td>
</tr>
<tr>
<td>Straw</td>
<td>2.200</td>
<td>1.840</td>
</tr>
<tr>
<td>Total gross benefit (Birr/ha)</td>
<td>1298.400</td>
<td>1020.020</td>
</tr>
<tr>
<td>Total costs that vary (Birr/ha)</td>
<td>92.200</td>
<td>106.530</td>
</tr>
<tr>
<td>Net benefit (Birr/ha)</td>
<td>1191.870</td>
<td>927.880</td>
</tr>
</tbody>
</table>

Source: Calculated from on-farm data

Similar profitability analysis for lentil production in Ada, Shenkora, and Gimbichu areas in the years 1991-93 indicated higher net benefit at farm household level (Table 3.)

Table 3. Profitability analysis for lentil production technology in Ada, Shenkora and Gimbichu areas, 1991-93

<table>
<thead>
<tr>
<th>Description</th>
<th>Improved package</th>
<th>Local package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (t ha⁻¹)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain</td>
<td>0.98</td>
<td>0.56</td>
</tr>
<tr>
<td>Straw</td>
<td>2.56</td>
<td>2.16</td>
</tr>
<tr>
<td>Adjusted yield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain</td>
<td>0.88</td>
<td>0.56</td>
</tr>
<tr>
<td>Straw</td>
<td>2.30</td>
<td>2.16</td>
</tr>
<tr>
<td>Total gross benefit (Birr/ha)</td>
<td>1282.70</td>
<td>913.47</td>
</tr>
<tr>
<td>Costs that vary (Birr/ha)</td>
<td>153.66</td>
<td>64.01</td>
</tr>
<tr>
<td>Net benefit (Birr/ha)</td>
<td>1129.00</td>
<td>849.46</td>
</tr>
<tr>
<td>Marginal rate of return (%)</td>
<td>-</td>
<td>312.00</td>
</tr>
</tbody>
</table>

Source: Calculated from on-farm data

The economic analysis for the improved package for lentil variety Chalew at the farm household level revealed that more economic benefits could be gained from the use of the improved technology. The gains from the improved cultivars can be discerned both from seed and straw yields (Tables 2 and 3). The overall picture justifies that there would be potentials to increase the productivity and production of the two crops if seed constraints are sufficiently tackled in the future.

Competitiveness and revenue divergence

Like the profitability analysis using partial budgeting, economic analysis was carried at the household level using measurement of DRC. The private cost budgets estimated for the two commodities were placed in the PAM framework, along with
social budgets calculated as described in the methodology section. Each type of
divergence between social and private values was identified early in the budgeting
process and tracked through the budget calculations in order to avoid under or over
estimation in the data set.

Both private and social revenues, costs, and profitability tended to be positive
for both chickpea and lentil. Lentil was found to enjoy the highest social
profitability. The social profit was, however, less than the private profit (Table 4).
The result was compared between local and improved technologies for chickpea and
lentil.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Revenues (Birr/ha)</th>
<th>Costs (Birr/ha)</th>
<th>Profits (Birr/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
<td>Social</td>
<td>Private</td>
</tr>
<tr>
<td>Chickpea impr.</td>
<td>3,306.00</td>
<td>3,726.00</td>
<td>1,457.00</td>
</tr>
<tr>
<td>Chickpea trad.</td>
<td>1,618.00</td>
<td>1,822.00</td>
<td>1,390.00</td>
</tr>
<tr>
<td>Lentil impr.</td>
<td>4,125.00</td>
<td>3,872.00</td>
<td>1,435.00</td>
</tr>
<tr>
<td>Lentil trad.</td>
<td>2,299.00</td>
<td>2,161.00</td>
<td>1,467.00</td>
</tr>
</tbody>
</table>

Source: Calculated from on-farm budget data

The overall results for chickpea and lentil showed that the domestic production had
comparative advantage. The comparison of profitability was made between
improved technologies and traditional practices of farmers. The traditional practices
gave less comparative advantage (Table 5). The level of DRC indicators lying
between one and zero proves the relatively higher magnitude of financial and
economic returns.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Chickpea</th>
<th>Lentil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Local</td>
</tr>
<tr>
<td>DRC</td>
<td>0.60</td>
<td>1.29</td>
</tr>
<tr>
<td>NPC</td>
<td>1.03</td>
<td>1.60</td>
</tr>
<tr>
<td>EPC</td>
<td>1.05</td>
<td>2.10</td>
</tr>
</tbody>
</table>

The DRC results show domestic resource efficiency under social pricing with
DRC ratios of 0.60 and 0.15 for chickpea and lentil, respectively. These results
again suggest that the production of the crops using improved technologies gives
more comparative advantage than producing them using traditional practices.
Thus, the production of these pulses for export markets can be expanded using
improved technologies. On the other hand, at all levels of the production system,
NPC ranges from 0.21 to 1.03. It appears that lentil and chickpea are relatively
protected by policy. Apparently, there is implicit subsidy on the production of
chickpea and lentil. These results were provided by the net policy coefficient
Technological options, competitiveness and export potentials of two selected pulses in Ethiopia

(normal protection coefficient) and effective protection coefficients (EPC). Under such argument, the protection of lentil and chickpea enjoyed up to 33% and 10% implicit subsidy, respectively on their value added.

All the foregoing efficiency indicators were worked out for random variables of which some were collected from farm level and some from secondary sources. Nevertheless, they vary across site and year. Prices are also varying across season in many locations. Taking the indicators as a guide for policy analysis as they stand would lead to erroneous conclusions of practical importance. Hence, care should be taken in interpreting these coefficients. One method of overcoming such problems would be to consider statistical significance tests for their validity. However, for lack of sufficient sample, the test was not considered.

Sensitivity analysis

DRC ratios and subsequent PAM results are sensitive to the yield levels, reference price levels of the commodity in question, wage, and exchange rates. Although it may be difficult to handle all the parameters simultaneously, reporting their sensitivity to component variables by computing changes or elasticities can increase the reliability of the indicators. Often elasticities are sensitive to sample means at which they are computed and thus statistical confidence remains a problem (Mentire and Degaldo, 1985).

DRCs were moderately elastic (0.15 to 0.70) to the world price change both for traditional and improved technologies. Higher response was observed for lentil with elasticity of 0.15 - 0.70. This indicates that the pulse group has better connection with the export market. Indicators of NPC and EPC were highly elastic (nearly 1 to 1.4) for both crops. DRCs were less elastic with regard to domestic prices of inputs but moderately elastic to NPC and EPC. Under such consideration, the effect of yield increase across all the commodity groups improved the DRC ratio and led to a marked increase in profitability (Table 6). The assumption is that use of technology would enable to use the potential of the land for increasing production, while losing the advantage in the case of local practice.

DRC ratios were also sensitive to yield loss or yield reduction. Unlike yield increase, it was assumed that different levels of yield loss would persist for the two commodities according to researcher’s recommendation. With assumed yield losses of 20% for improved and 10% for traditional practices for chickpea, respectively, the competitiveness of the crop reduced. Higher magnitude of yield loss was considered for lentil production than for chickpea due to weather risk. Although it appears to be a decrease in the level of DRC ratio and less profitable, still under high-risk condition, the production of lentil could be a profitable venture if technologies are utilized to the optimum.
### Table 6. Sensitivity of indicators with respect to parameter changes (elasticities of indicators)

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Indicators</th>
<th>Chickpea</th>
<th>Lentil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Local</td>
<td>Improved</td>
</tr>
<tr>
<td>10% Decrease in world price of output</td>
<td>DRC</td>
<td>0.39</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>NPC</td>
<td>1.10</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>1.20</td>
<td>1.30</td>
</tr>
<tr>
<td>Yield increase by 30%</td>
<td>DRC</td>
<td>0.16</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>NPC</td>
<td>0.88</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>0.88</td>
<td>1.10</td>
</tr>
<tr>
<td>Price of input increase by 10%</td>
<td>DRC</td>
<td>0.35</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>NPC</td>
<td>0.88</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>0.88</td>
<td>1.10</td>
</tr>
<tr>
<td>Yield decline by 20%*</td>
<td>DRC</td>
<td>0.35</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>NPC</td>
<td>0.88</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>0.88</td>
<td>1.33</td>
</tr>
</tbody>
</table>

*30% was assumed for lentil production

Similarly, sensitivity analysis was conducted assuming an increase in input price and a reduction in world price. The DRC remarkably changed—exhibiting that the competitiveness of the crops will decrease under the assumption of the two scenarios.

In general, production of chickpea and lentil will lead to more comparative advantages under the use of improved technologies and they are competitive for export diversification. However, analysis of comparative advantage should go beyond DRC analysis and consider institutional factors which may not be easily justified through DRC ratios. Institutional constraints such as supply of improved seeds, processing facilities, and packaging would certainly add values and increase competitiveness of these crops. In-depth treatment of such issues should be considered in other studies.

### Conclusions

This study indicated the possibility of improving export potentials of pulses in Ethiopia by boosting agricultural production. Ethiopia has clear comparative advantages in terms of diverse agroclimatic condition, soil type, and human resources. The impact of these factors on the possibility of diversifying its export is very high. The long-term development strategy should call for the formulation of an appropriate strategy, which will consider both the supply and demand for the export of chickpea and lentil. Relative price movement and corresponding supply responses should consider institutional innovations, which lead to viable economic benefits to individuals. While strengthening existing export trade partners, exploring new market potentials particularly in the Middle East should be thought of.
References


CO-INTEGRATION AND ERROR-CORRECTION APPROACHES TO THE INTEGRATION OF SIDAMA AND CENTRAL ETHIOPIA COFFEE MARKETS

Admasu Shibru*, Belay Kassa*, and Mutat Demeke*

Introduction

Coffee has both social and economic significance in Ethiopia. It provides income and employment for about 25% of the population. It is also a significant source of government revenue through taxation. Moreover, it accounts for about 70% of the nation’s foreign exchange earnings. Its considerable contribution to the total export earnings of the country is also evidenced by the fact that it accounted for nearly 57% of the instability in total export earnings over the period 1962 - 1990 (Belay, 1998).

Coffee grows almost in all regions of Ethiopia. Coffee Arabica, which is known to have originated in Ethiopia, is being produced even with a minimal treatment as a forest plant in Ethiopia—owing to favorable climatic conditions.

Both sun-dried and washed Coffee Arabica is being exported from Ethiopia. Some of the world’s finest varieties are produced and exported from Ethiopia (ITC-UNCTAD/GATT, 1992). The largest share of Ethiopia’s export coffee goes to the traditional trading partners, namely, U.S.A., Germany, Italy, Japan, France, and Saudi- Arabia.

Ethiopia could not exploit the potential from the coffee sector due to the inconsistent and distorted economic policies in the country in the last three decades and natural (especially climatic and disease incidence) and artificial factors such as shortage of infrastructure (location, number, frequency and standards of marketing in rural market centers; type, quality, passability and spatial coverage of road & transport networks; credit, etc.). For instance, the

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* This work is part of a M.Sc. thesis undertaken by the first author. Alemaya University.
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* Alemaya University of Agriculture
* Addis Ababa University
socialist government (1974-1991) introduced physical control on stocks and domestic coffee movements and established official price structures based on prevailing free-on-board (FOB) values. As a result, the price of coffee was determined uncompetitive for the government used to fix a price ceiling at the auction market. This situation had constrained the activities of private traders. In fact, during this period, more than 90% of the coffee was being collected, processed and exported by a government parastatal called Ethiopian Coffee Marketing Corporation (ECMC). Moreover, peasants were not able to sell their produce to whom they wanted.

The excessive involvement of the government in the economic system was substantially reduced since the market reform of 1990. Certain liberalization policies that laid down the precondition for free marketing were introduced during the last years. Some of the reform measures included:

- involvement of private firms in every stage of the marketing system.
- freedom of peasants to sell their produce to whom they want in the legal channel;
- reduction of the licensing fees as compared to their levels in the 1974-1991 period; and
- setting of minimum farm-gate prices.

In reality, these reforms were expected to improve the performance of the marketing system. However, such reform measures are constrained by different factors. Moreover, the realization of the policies in the implementation process is another important factor which determines the performance of the marketing system. Thus, it is justifiable to see the integratedness of the markets as an indicator of the functioning of the system.

Methodology

Data

A formal survey was made in five districts of Sidama Zone (one of the major coffee producing regions in the country located about 300 kilometers South of

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5 The licensing fees were reduced from Birr 5,000.00 to Birr 150.00 for primary collectors; from Birr 10,000.00 to Birr 150.00 for wholesale dealers; and the yearly trading permit renewal fees were also reduced from Birr 250.00 to Birr 150.00 for the primary collectors, and from Birr 1,500.00 to Birr 150.00 for wholesale dealers. (Birr is the Ethiopian national currency. During the time, 1 US dollar was exchanged for about 6.9 Birr).
Addis Ababa). The districts were Dale, Shebedino, Aleta Wendo, Dara and Bensa. A structured questionnaire was used to collect data on the structure and conduct of the marketing system through interviewing sample farmers, coffee collectors (who are locally called sebabsies), wholesale dealers including both agents of the government parastatal - Ethiopian Coffee Purchase and Sales Enterprise (ECPSE) and private collectors, hullers and pulpers. Moreover, time series data on coffee prices (from January 1991 to March 1997) were collected from a local market (at Aleta Wendo) and central coffee market (at Addis Ababa Auction Market).

A multistage sampling procedure was used to select the service co-operatives and the peasant associations. Then, 80 farmers and 9 pulpers were selected. The total sample size was drawn from the five districts based on the relative market share. Similarly, 45 sebabsies, 34 wholesale dealers, and 5 hullers were selected randomly.

Analytical framework

General
When goods and services move from production to consumption, they pass through different dimensions of market whereby corresponding utility is added. Hence, there exists relationship among markets. The type and strength of the relationship between two markets is expected to be consistent with certain standards in order to judge the performance of the system.

Integration among two or more markets is a multidimensional concept implying similarity in price (price integration), standardization of measures and common trade habits. The measurement of spatial market integration can provide basic data helpful to understand how specific markets work and it is usually used to estimate marketing efficiency (Ravallion, 1986). Market integration is an integral aspect in marketing analysis giving a detailed picture of the process of incentive transmission across the marketing chain.

Past studies like Ravallion (1986), Palaskas and Harris-White (1993), and Alexander and Wyeth, (1994) have identified market integration to be best estimated through analyzing the nature of transmission of price signals from one market to another. Thus, price integration was used in this study to estimate the integration of the two markets, i.e. the local and the central markets. Aleta Wendo market was taken to represent the local markets since it is the dominant coffee market in the area and data were better managed there as compared to in the rest.

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6 Peasant Association is a formal structure consisting a number of farming households. The upper formal structure is called Service Co-operative that consists of a number of Peasant Associations and operates to enforce the rights and duties of the farming community through a committee.
of the districts. The analysis was supported by the description of structural conditions since this serves for a thorough understanding of the functioning of the marketing system (Lutz et al., 1995).

Models for market integration (price integration)
Among the several methods of measuring spatial price relationships, the following were commonly used.

Correlation coefficient: Correlation coefficient can indicate the strength of the relationship between the two series. The correlation coefficient is commonly used for it is simple. Useful information about market integration can be obtained from the coefficient if carefully computed and interpreted with a good knowledge of the workings of the market (Alexander and Wyeth, 1994). A low correlation coefficient is an indicator of a weak or no integration of two markets.

However, the price correlation coefficient is criticized in that high coefficients may coexist with physically unconnected or monopolized markets, and low coefficients can be obtained with intense trade between markets. It may also be misleading if the two price series are similarly affected by a common variable.

The Ravallion Model: To solve specification and estimation problems assumed by a simple bivariate model, Ravallion developed a structural regression model of price formation in N local markets by assuming that local prices \( (P_1, ..., P_N) \) are dominated by one central market price \( (P_1) \) (Ravallion 1987). The dynamic model is constructed as:

\[
P_j = \sum_{i=1}^{n} a_{ij} P_{i-j} + \sum_{k=2}^{N} \sum_{j=0}^{n} b_{ij} P_{k-1-j} + C_j X_{1j} + e_{ij} \quad \text{EQ.1}
\]

\[
P_k = \sum_{i=1}^{n} a_{ij} P_{i-j} + \sum_{j=0}^{n} b_{ij} P_{k-j} + C_i X_{1i} + e_{ik} \quad \text{EQ.2}
\]

Where: \( j \) (the number of lags) = 1, 2, ..., \( n \); \( k \) (the number of markets) = 2, 3, ..., \( N \); and \( X = \) other factors.

The model assumes that the local markets are linked with a central market that is exogenous to the model. This model is said to be superior over the correlation coefficient in that it provides the difference between concepts of short-run and long-run market integration (Alexander and Wyeth, 1994; Palaskas and Harriss-White, 1993; Tilburg and Clemense, 1995). Given equation 2, the hypotheses that need to be tested were the following.

- Market segmentation, i.e. whether the central market prices influence local market prices. This happens when \( b_{ij} = 0 \) for \( j = 0, 1, ..., n \);
• Short-run market integration, i.e. whether a price increase in the central market was immediately passed on to the local market price. This happens when \( b_{ji} = 1 \). There will also be lagged effects on future prices unless, in addition to the equation '\( b_{ji} = 1 \)', \( a_{ji} = 0 \) for \( j = 1, 2, ..., n \) and

• Long-run market integration.

A long-run equilibrium is one in which market prices are constant over time and undistributed by any local stochastic effects, i.e.,

\[
\sum_{j=1}^{n} a_{ji} + \sum_{j=0}^{n} b_{ji} = 1
\]

In line with the Ravallion model, Timmer cited in Ahmed and Bernard (1989) constructed an index of market connection (IMC) to measure the relative influences of the two sets of forces. The index of market connection is defined as the ratio of the lagged local market coefficient to the lagged central market coefficient in equation 2. In general, the closer the index is to zero, the greater the degree of market integration; and Timmer considers that a value of IMC less than one reflects a high degree of short-run market integration (Ahmed and Bernard 1989).

Even though the Ravallion model has many advantages over a simple bivariate model, the coefficient estimates of the stochastic equation (equation 2) can be imprecise if the dynamics are of relatively high order. This is because of the multicollinearity problem between lagged values of the explanatory variables. Moreover, the specification of equation 2 in levels can raise problem of spurious correlation associated with regressions of trending variables in levels (Palaskas and Harris-White, 1993).

**Co-integration and Error Correction Model:** The co-integration and error correction approach is known to be a good indication of market integration (Alexander and Wyeth, 1994; and Palaskas and Harriss-White, 1993). Its market integration approach is based on the co integration between prices. Its advantages over the Ravallion model include the provision of a method of testing whether one series is exogenous or not, and showing the direction of causality between markets. Moreover, there is no need of specifying a reference market as in the case of Ravallion model (Alexander & Wyeth, 1994; Palaskas & Harriss-White, 1993).

The first step in using co integration approach for market integration analysis is to determine the order of integration of the price series. Usually, the order of integration of a price variable can be identified as its level of differencing at which the variable becomes stationary. A variable which has a stationary
representation after differencing \( d \) times is said to be integrated of order \( d \), denoted as \( I(d) \). A time series \( Y_t \) is stationary if the joint distribution of \( Y_t \) and \( Y_{t+r} \) is independent of time \( (t) \), though it depends on the lag (Engle and Granger, 1987).

The standard procedure for determining the order of integration is the Augmented Dickey-Fuller (ADF) test. This involves applying the following regression.

\[
\Delta Y_t = a + \rho_1 Y_{t-1} + \rho_2 \Delta Y_{t-1} + \rho_3 \Delta Y_{t-2} + \ldots + \epsilon_t \tag{EQ.3}
\]

The \( t \) statistic on the estimated coefficient of \( Y_{t-1} \) is used to test the null and alternative hypotheses: \( H_0: Y_t \) is \( I(1) \) versus \( H_1: Y_t \) is \( I(0) \). If the null hypothesis cannot be rejected, then \( Y_t \) may be \( I(1) \) or \( I(2) \), or have an even higher order of integration. To find the order of integration, the test is repeated by using \( \Delta Y_t \) in place of \( Y_t \), i.e. applying the following regression.

\[
\Delta^2 Y_t = a + \rho_1 Y_{t-1} + \rho_2 \Delta^2 Y_{t-2} + \ldots + \epsilon_t \tag{EQ.4}
\]

The ADF statistic, therefore, tests the hypothesis: \( H_0: \Delta Y_t \) is \( I(1) \) versus \( H_1: \Delta Y_t \) is \( I(0) \) i.e. \( H_0: Y_t \) is \( I(2) \) versus \( H_1: Y_t \) is \( I(1) \), respectively where \( \Delta \) signifies 'a change in'. If the ADF statistic is not large and negative, \( H_0 \) is not rejected.

The second step in the co-integration approach is to test for co-integration between the two price series. The implication in finding the two price series integrated and co-integrated is that long-run market integration exists. There are many tests of co-integration of the two price series.

The first and second co-integration tests proposed by Engle and Granger utilize Dickey-Fuller (DF) type regressions to consider whether the autoregressive parameter for the estimated residuals from the co-integrating regression is significantly different from one. If there is a unit root, then the two series are co-integrated. The first Dickey-Fuller type test depends on the estimates of the regression:

\[
\Delta \hat{e}_t = -\phi \hat{e}_{t-1} + \epsilon_t \tag{EQ.5}
\]

where \( e_t \) is the first-stage estimate of the residual from the co-integrating regression, i.e. when the local market price is regressed on a constant and the central market price. The test statistic is constructed from the ratio of the estimated coefficient of \( e_{t-1} \) to its standard error (a \( t \)-ratio). The null hypothesis of no co-integration is rejected for values of the coefficient different from zero or the
calculated values of the Dickey-Fuller that exceed the tabulated critical values determined by Engle and Granger.

The second Dickey-Fuller type test is by applying a regression of the form:

\[ \Delta \hat{e}_t = - \phi \Delta \hat{e}_{t-1} + \theta \Delta \hat{e}_{t-2} + \ldots + \theta_p \Delta \hat{e}_{t-p} + E_t \] .................................................. EQ.6

The addition of the lagged differences ensures that the second-stage residuals of the Augmented Dickey-Fuller (ADF) regression, \( E_t \), are serially uncorrelated. The ADF test statistic is the *t-ratio* of the coefficient of \( e_{t-1} \).

The third alternative test of co-integration is the standard Durbin Watson test statistic from the first stage ordinary least square estimate of the co-integrating regression. The null hypothesis of no co-integration is rejected for values of standard Durbin Watson test statistic which are significantly different from zero.

The third step of market integration is that when the price series is integrated in the long-run, the condition of long-run integration is imposed and the model is rewritten as an Error-Correction Model (ECM) to test for short-run integration. The ECM is constructed as:

\[ \Delta X_t = \alpha_0 + \beta (X_{t-1} - a - b Y_{t-1}) + \alpha_1 \Delta Y_t + \sum_{k=1}^\infty (\delta_{1k} \Delta X_{t-k} + \delta_{2k} \Delta Y_{t-k}) + e_t \] .............. EQ.7

The error correcting property arises from the fact that if \( X_{t-1} \) is above its equilibrium value, \( \Delta X_t \) will be lower than would otherwise be the case, and vice versa if \( X_{t-1} \) is below its equilibrium level. The test of full market integration can be performed by testing the restriction: \( \alpha = 1, \beta = -1 \), and the coefficients of any lagged terms be zero using F-statistics.

**Results and Discussion**

**Market integration**

To estimate the long run relationship (or integration) of the two price series, the weekly averaged price data from January 1991 to March 1997 was used. Both series were found non-stationary at their level. Nevertheless, results of the first differences were all stationary since the t-statistics of Dickey-Fuller and Augmented Dickey-Fuller are all less than the critical values. Thus, both series are integrated of order one (Table 1).
Table 1. Unit root tests of the price series

<table>
<thead>
<tr>
<th>T statistic</th>
<th>X₁</th>
<th>X₂</th>
<th>LX₁</th>
<th>LX₂</th>
<th>ΔLX₁</th>
<th>ΔLX₂</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
<td>-1.988</td>
<td>-1.705</td>
<td>-1.961</td>
<td>-1.75</td>
<td>-9.731</td>
<td>-10.751</td>
<td>-4.469</td>
</tr>
<tr>
<td></td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.458)</td>
<td>(-3.458)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
</tr>
<tr>
<td>ADF (1)</td>
<td>-2.194</td>
<td>-1.752</td>
<td>-2.011</td>
<td>-1.6</td>
<td>-7.284</td>
<td>-7.042</td>
<td>-3.733</td>
</tr>
<tr>
<td></td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
<td>(-3.452)</td>
</tr>
</tbody>
</table>

Values in brackets are 95% critical.

Note: X₁=the local market price series; X₂=the central market price series; LX₁=the log of X₁; LX₂=the log of X₂; ΔLX₁=the first difference of LX₁; ΔLX₂=the first difference of LX₂; R=the residual from regressing LX₁ on a constant and LX₂.

The co-integration of the two price series was tested using the two steps in Engle and Granger procedure. In the specification of the co-integrating regression, logarithms of the series were taken due to their advantages in the specification of the model (Table 2).

Table 2. Regression results when local price is regressed on a constant and central market price (R₁), and when logarithm of local price is regressed on a constant and logarithm of central market price (R₂)

<table>
<thead>
<tr>
<th>Statistic</th>
<th>R₁</th>
<th>R₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>8.250[0.001]</td>
<td>0.260[0.002]</td>
</tr>
<tr>
<td>Coefficient</td>
<td>0.770[0.000]</td>
<td>0.910[0.000]</td>
</tr>
<tr>
<td>R²</td>
<td>0.965</td>
<td>0.967</td>
</tr>
<tr>
<td>SER</td>
<td>12.253</td>
<td>0.091</td>
</tr>
<tr>
<td>F-test</td>
<td>2944.100[0.000]</td>
<td>3143.200[0.000]</td>
</tr>
<tr>
<td>RSS</td>
<td>15914.200</td>
<td>0.871</td>
</tr>
<tr>
<td>DW</td>
<td>0.615</td>
<td>0.642</td>
</tr>
<tr>
<td>Functional form</td>
<td>CHI-SQ (1)=3.096[0.07]</td>
<td>CHI-SQ (1)=0.878[0.35]</td>
</tr>
<tr>
<td>Serial correlation</td>
<td>CHI-SQ (1)=51.77[0.00]</td>
<td>CHI-SQ (1)=49.75[0.00]</td>
</tr>
<tr>
<td>Normality</td>
<td>CHI-SQ (2)=3.111[0.21]</td>
<td>CHI-SQ (2)=0.253[0.88]</td>
</tr>
<tr>
<td>Heteroscedasticity</td>
<td>CHI-SQ (1)=21.71[0.00]</td>
<td>CHI-SQ (1)=0.039[0.84]</td>
</tr>
</tbody>
</table>

Accordingly, the null hypothesis that the residual from the long-run regression of the co-integration regression be non-stationary was rejected since both test statistics are smaller than the critical values (Table 1). Thus, the two markets were found integrated in the long run.

Then, the ECM was specified by regressing the change in price series of the local market on a constant, current and lagged terms of the change in price series of the auction market, the lagged terms of the change in the local market price series, and on the first lag of the residual from the co-integration regression.
The equation was estimated as:

\[
\Delta X_{1t} = 0.003 - 0.305 \Delta X_{1t-1} + 0.84 \Delta X_{2t} - 0.029 \Delta X_{1t-1} + 0.09 \Delta X_{1t-2} + 0.075 \Delta X_{1t-3} + 0.2 \Delta X_{2t-1} + 0.07 \Delta X_{2t-2} - 0.075 \Delta X_{1t-2} + 0.09 \Delta X_{1t-3} + 0.2 \Delta X_{2t-1} + 0.07 \Delta X_{2t-2} - 0.05 \Delta X_{2t-3} - 0.007 X_4
\]

Where the equilibrium error, \( ELX_{1t} = LX_{1t-1} - 0.26 - 0.91 LX_{2t-1} \). \( \Delta \) refers to 'the change in', and \( X_4 \) a dummy for the devaluation of Ethiopian Birr. \( R^2=0.72, DW=1.989, N=80, F (9,70)=20.4[0.000] \). The figures in parenthesis are t-ratios.

From the test of combined restrictions, the hypothesis of full market integration was rejected. This implies that the central market does not summarize all available information determining the generation of the local price instantaneously because of the structural and institutional factors embodied in the system. That means, there isn't efficient use of available information by the participants, and thus, the markets are not fully integrated in the short run.

From the regression of error correction, it is clear to see a significant immediate or short run effect of central market prices on that of local market. About 84% of the change in the local price was due to the current change in the central market price. Moreover, the coefficient of the lagged error term of the co-integrating regression shows the speed with which the price of coffee at the central market and the local market approach their equilibrium. The negative sign confirms that the adjustment is towards equilibrium.

\(^7\) The OLS is based on an adjusted White's Heteroscedasticity consistent standard errors. Moreover, the diagnostic tests of the OLS indicate no problem of serial correlation, functional form and normality with CHI-SQ (1)=0.007[0.93] for serial correlation, CHI-SQ (1)=0.2[0.65] for functional form, CHI-SQ (2)=1.3[0.5] for normality, and CHI-SQ (18)=5.2[0.99] for predictive failure.

\(^8\) The original equation had a residual sum of squares of 0.37566. Testing the hypothesis: \( \alpha=1, \beta=-1 \), and the coefficients of lagged terms be zeros using F-test forms a restricted form of the equation with residual sum of squares of 0.778. Then a 5% significance level tabulated value of F-statistic with N=80, d=8 equals 2.05, where as the calculated value of F-statistic is 9.37. Hence, the test ended with rejecting the hypothesis of full market integration.
Structural barriers

The integration of local and central coffee markets is determined by the structure of the marketing system and by the way the different participants are making different decisions in the process of fixing prices of their services. The former Ministry of Coffee and Tea Development (MCTD) had designed a formal channel for coffee marketing to insure the delivery of most of the coffee production to export centers, and ease the control and inspection of coffee quality.

The formal channel was such that exporters are bidding for hulled and graded coffee at the auction market where wholesale dealers, who can be either the government parastatal—Ethiopian Coffee Purchase and Sales Enterprise (ECPSE), or individual dealers (akrahies) supply the quantity. The average daily prices of sun-dried and washed coffee at auction were taken as a base for the wholesale dealers in fixing the farm-gate prices for the next day by deducting their estimated marketing costs. Then, the private wholesale dealers purchase unhulled coffee from local collectors whereas the ECPSE purchases both from local collectors and farmers.

Although the primary suppliers of coffee are unconcentrated for coffee is being supplied by many farmers from different areas whereby no producer affects the functioning of other producers. The market at the next level (i.e. local collectors’ level) ranged from a weak oligopsonistic to a strongly oligopsonistic type. According to the market structure criteria suggested by Kohls and Uhl (1985), in 1995/96 the four-firms’ concentration ratios of sehsabies in Bensa and Shebedino coffee markets were strongly oligopsonistic with 65 and 68% ratios, respectively, and in Dale weakly oligopsonistic with 33.2% ratio.

The markets at the upper stage, i.e. the wholesale dealers, were all highly oligopsonistic than those at the sehsabies’ level. In 1995/96 the four-firms’ concentration ratios of the wholesale dealers in Shebedino, Bensa and Dara coffee markets ranged from 69 to 100%—indicating a strongly oligopsonistic type while in Aleta Wendo and Dara coffee markets, the ratios were about 34 and 44%, respectively — indicating weakly oligopsonistic markets.

Even though the number of both local collectors and wholesale dealers had increased in the period from 1992/3 to 1995/96, this was not followed by the reduction of the concentration of firms to a competitive level. However, the monopoly power of the government parastatal had dramatically decreased from a concentration ratio of 100% in most markets in 1992/93 to less than 20% in Dale and Aleta Wendo markets, and to about 29% in Shebedino market in 1995/96;

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Kohls and Uhl suggest that as a thumb rule, a four largest enterprises’ concentration ratio of 50% or more is an indication of strongly oligopolistic industry, 33-50%, a weak oligopoly, and less than that, an unconcentrated industry.
but, it was dominating the wholesale dealing activities in Bensa market, which was characterized by a limited number of private traders.

According to the structure of coffee marketing, the marketing incentives flow from top (the auction market) to down (the local coffee markets) through the marketing network. On top of the unidirectional influence in the pricing system, the exporters were found to be strongly oligopsonistic even though their number had been increasing. The four-firms’ concentration ratios of exporters were 63% in 1992/93, 64% in 1993/94, 67% in 1994/95 and 59% in 1995.

The uncompetitive nature of the different participants in the coffee marketing system resulted in a difference in their bargaining, and this ultimately ends with a condition that some agents take abnormal profit and others lose. Concurrently, spontaneous equilibrium relationship (or short-run market integration) could not be attained as confirmed by the ECM between the local and central markets due to the effects laid on the exchange processes. The major structural barriers were prohibition of licensing for multiple activities like ‘local collecting and wholesale dealing', ‘exporting and wholesale dealing'; shortage of capital and credit facility; and the difficulty to obtain working capital requirements for many traders.

The other aspect by which the prevailing structure of the market limits the integration of the two markets is the development of parallel marketing channel. The parallel marketing channel for sun-dried coffee is the one where producers sell to domestic consumers, and high-income farmers or to other unlicensed collectors, to ECPSE, or after hulling manually or by using local grain mill, they sell to domestic consumers, or smuggle it to neighboring countries. Although some farmers prefer the illegal traders as they sometimes pay better prices, and collect the coffee through home-to-home visit. These traders are known for cheating the farmers through scaling. The illegal traders were insidious competitors of licensed local collectors. They also are responsible for the weak relationship between the demand of coffee at auction market and the local supply for considerable amount of coffee is being smuggled through these traders.

Conclusions

Owing to the development of the subject ‘Econometrics', improvements should be made on the models used to analyze spatial market integration. Regression analyses are better than simple correlation coefficients. The procedure pioneered by Ravallion is widely used but is valid only under certain conditions. The alternative offered is an error correction mechanism.

Recalling that coffee has both economic and social significance to the country as a whole, efficient marketing mechanism helps in generating and transmitting
Co-integration and error correction approaches to the integration of Sidama and Central Ethiopia coffee markets

efficient prices that can be a good incentive to all participants in the system to invest more in the sector. The co-integration and error-correction methods applied on a weekly averaged coffee price series in Sidama (local market) and auction market of Addis Ababa indicated that the two markets are integrated in the long run. But the hypothesis of full market integration was rejected.

The major inefficiency elements were the oligopsonistic and insidious nature of the different participants, and the system of licensing. These all are at odds with strategies of motivating coffee production. The oligopsonistic and insidious nature of the different participants resulted in lack of full integration between the auction market and the local markets.

Thus, it requires certain intervention that improves the marketing system by relaxing the legal entry barriers such as the licensing system—allowing to operate multiple coffee marketing activities; designing effective instruments that control the minimum farm-gate price, and the insidious act of traders. These can bring about improvement in the integration of the two markets and insure a competitive determination and transmission of coffee prices.

References

Introduction

In a country like Ethiopia where capital shortage is the bottleneck to growth, enhancing export trade is said to be a very important remedy to the problem. The country has comparative advantage in primary products, and therefore, the production and export of these products should be encouraged for the same end. Primary products are of two categories: food and industrial raw materials. Whereas the demand for food products is relatively narrower in the world market, industrial raw materials enjoy more demand. This is mainly because ultimate consumers and industries demand food and industrial raw materials, respectively and industrial raw materials also enjoy the so-called derived demand—the demand for a given input resulting from the demand for its respective output. The prospect of expanding and improving export earnings would, therefore, lie on enhancing the production and export of industrial raw materials. Besides, industrial development in such a country is also based on strengthening its raw material base.

Amongst the industrial raw materials, natural gum and incense are the two in which the country has a wide resource base but are yet the least exploited (Natural Gum Marketing and Processing Enterprise (NGMPE), 1998). In Ethiopia, these products are produced mainly in Somali National Regional State (SNRS), Tigray, and in smaller amounts in other regions. The SNRS is known for Gum Arabic (Mucha) and Gum Myrrh (Kerbe) and the main focus of this paper was to see into the production and marketing of these products in the SNRS.

These products serve both for direct consumption and largely as industrial raw materials at home and abroad. They could be used as raw materials in the manufacturing of adhesives, beverages, rubber, ceramics, cosmetics, leathers.

1Throughout the household and marketing aspects of this document, the two products will be referred to as gum and incense, respectively.
detergents, fertilizers, explosives, latex coatings, metallurgy, paper, petroleum products, pharmaceuticals, plastics, textiles, glass and others. Importing clients include China, Germany, Canada, Saudi Arabia, United Arab Emirates and France (NGMPE, 1998). Explicit statement of the share of the products in the total export of the country, however, was not found in the official export statistics of the country’s exports.

Given their prospect and importance, however, no systematic study has been conducted on the production, productivity, consumption and marketability of these products. This particular study was, therefore, initiated with the objective of providing systematic information on the production and marketing of gum and incense by evaluating the activities in gum and incense marketing. More specifically, the study was designed to:

- systematize information on the general marketing and export of the two products; and
- analyze structure, conduct and performance (SCP) of gum and incense markets.

**Methods of Data Collection and Analysis**

To investigate the conditions of gum and incense marketing, out of the eight zones in the SNRS, three were selected based on estimated share of production and marketing of the products in the State. Primary data were collected mainly at two levels—at the household level and at the market level from structurally sampled respondents using formal questionnaires. One hundred fifty-two established sellers operating in 12 major market places were interviewed. In addition, attempt was made to collect marketing information by interviewing 180 household heads. Of these, the data was drawn only from 142 households mainly because some data were missing from 38 households.

Informal discussions with the regional officials and marketing personnel other than the households and the NGPME were also used as source of some primary information. Secondary information was also obtained from the Agricultural Bureau of the SNRS and NGPME.
Results and Discussion

Marketing of gum and incense

Marketing in the context of gum and incense refers to the flow of the products from the producers to the consumers through their intermediaries, or enterprises including wholesalers, retailers and, at times, directly from producers to consumers. The market study is believed to remedy the persistent production problems for correcting problems in the market is not only serving the market end but also it is guiding production by the signals producers could get from the market. Some of the major results obtained on the marketing process are infrastructure and demand and supply conditions.

Infrastructure

Transportation: The major means of transporting gum and incense was found to be human labor (80%). Next to human labor were pack animals followed by vehicles and animal-drawn carts. Some respondents claimed to have used combinations of different means of transportation.

Storage: It seemed that collectors are motivated by the following reasons in deciding to store their products instead of delivering them to the market: expectation of higher prices and increasing the quality of the products. However, it was learnt that the products are ready for market whenever collectors feel that they should deliver the products to the market. With this ever marketability of the products, producers would only incur the cost of storage if they speculate on prices by collecting and storing the products. The same holds true for the second reason. The storage of gum and incense reduces quality—producers should, therefore, not store the products to increase quality. This was found to be the reason for why only 36% of the sample households reported to store gum and incense.

Processing: It was found that collectors did not undertake any significant processing of the products at least until the products reach the local markets.

Market place: The main market places where the two products are exchanged were Gode, Dihun, Qelafo, Mustahil, Segeg and Gerbo (Table 1). The products are channeled from producers to the major markets largely by pastoralists especially to the Garasley, Barmil, Segeg and Gerbo markets. The products reach the Gode, Qelafo and Mustahil markets through wholesalers or retailers who somehow took part in the trade in different satellite markets.
Grain Additional File 1

Table 1. The main local markets of gum and incense and suppliers of these products

<table>
<thead>
<tr>
<th>Zone</th>
<th>District</th>
<th>Name of market centre</th>
<th>Marketing channel/satellite market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gode</td>
<td>Gode</td>
<td>Gode</td>
<td>Daraye, Afade, Hadame, Ilale, West Gode Pastoralists</td>
</tr>
<tr>
<td>Dihun</td>
<td>Garasley</td>
<td>Barmil Pastoralists</td>
<td>Qura Jomo, Haarad, Harinka</td>
</tr>
<tr>
<td>Qelafo</td>
<td>Qelafo</td>
<td>Donyerie</td>
<td></td>
</tr>
<tr>
<td>Mustahil</td>
<td>Mustahil</td>
<td>Segeg Pastoralists</td>
<td></td>
</tr>
<tr>
<td>Segeg</td>
<td>Segeg</td>
<td>Gerbo</td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey data

Demand and supply conditions

Not more than 10% of the households were found to purchase additional gum and incense or both for consumption. This indicates that the households are self-sufficient as far as the consumption of gum and incense is concerned. Little room is, therefore, left for expanding production in order to meet local demand. Hence, channelling the products to other markets is increasingly necessitated.

Survey data indicated that the consumption of gum and incense is nearly indispensable in the study area as 93.3% and 94.7% of the subjects were found to consume gum and incense, respectively.

A large proportion of households were found to attach primary importance to medicinal (34%), smoking (18.5%) and fumigant (15%) values of gum (Table 2).

Table 2. Home purposes into which gum is put

<table>
<thead>
<tr>
<th>Purposes</th>
<th>Percentage of households using gum for different purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>Medicinal</td>
<td>34.0</td>
</tr>
<tr>
<td>Fumigant</td>
<td>15.0</td>
</tr>
<tr>
<td>Fragrance</td>
<td>7.7</td>
</tr>
<tr>
<td>Candle</td>
<td>1.4</td>
</tr>
<tr>
<td>Food</td>
<td>7.8</td>
</tr>
<tr>
<td>Ink</td>
<td>2.1</td>
</tr>
<tr>
<td>Smoking</td>
<td>18.5</td>
</tr>
<tr>
<td>Chewing</td>
<td>8.5</td>
</tr>
</tbody>
</table>

A relatively small proportion of households also made use of gum primarily for chewing, food, fragrance, candle and ink production purposes. Households also made secondary and tertiary use of gum for food, smoking, candle making, and ink and pharmaceutical productions.

The households made use of incense primarily for smoking (32.8%), fragrance making (20.8), and food (13.9) (Table 3). Secondary and tertiary uses are made out of incense for fragrance, ink, smoking and medicine.
Table 3. Home purposes into which incense is put

<table>
<thead>
<tr>
<th>Purposes</th>
<th>Percentage of households using incense for different purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>Medicine</td>
<td>7.9</td>
</tr>
<tr>
<td>Fumigant</td>
<td>-</td>
</tr>
<tr>
<td>Fragrance</td>
<td>20.8</td>
</tr>
<tr>
<td>Candle</td>
<td>4.9</td>
</tr>
<tr>
<td>Food</td>
<td>13.9</td>
</tr>
<tr>
<td>Ink</td>
<td>-</td>
</tr>
<tr>
<td>Smoking</td>
<td>32.8</td>
</tr>
<tr>
<td>Chewing</td>
<td>9.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Survey data

Generally, gum and incense are consumed directly and after being processed. From the information we had on home demand for gum and incense, we could project that these products could be put into many industrial uses and could be a potential resource for economic development.

It was also learnt that the production (mainly collection) of the two products is done on seasonal basis and most of it is traded. Different volumes of gum and incense are collected (Table 4).

Table 4. The volume of gum and incense production

<table>
<thead>
<tr>
<th>Product</th>
<th>Mean (Kg)</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gum</td>
<td>51.9</td>
<td>4.89</td>
</tr>
<tr>
<td>Incense</td>
<td>46.7</td>
<td>3.86</td>
</tr>
</tbody>
</table>

Market structure, conduct and performance

Market structure
The structure of the market for gum and incense in the region was studied in the context of the degree of concentration of buyers and sellers, and entry and infrastructural barriers like market price information.

Market functionaries: The gum and incense markets in the region were characterized by less concentrated primary suppliers. Too many farmers, whereby no collector affects the activity of other collectors, supplied the products. Moreover, there were many channels ranging from small intermediaries to large regional sellers for marketing the products.
The market at the next level had very weak concentration where intermediaries were the largest buyers of household sales (65%). However, the volume of sales by a single intermediary was not significantly different from that of any other intermediary. Thirty-four percent of the producers were found to sell their products directly in the market. Only an insignificant numbers of them were found to sale through other miscellaneous channels.

Intermediaries were observed to make their largest sales to established sellers in the market who possibly sell the products to other regions. Produces collected by intermediaries were also directly sold to consumers and established sellers. Exporters made for less than 2% of the total intermediaries’ sales and an insignificant proportion of the products carried by intermediaries was destined to miscellaneous market layouts. The intermediaries were found to end up in selling their produces to the markets presumably on proximity basis and it was less likely that one intermediary affects the price of the other in terms of the volume of supply.

**Barriers to entry: an analysis at the producers’ level:** Potential producers could at least partly be kept out from the production and sale of gum and incense in two ways. There could exist barriers to collecting the products. On the other hand, the amount sold to the market might not be the entire amount collected. Barriers to
collecting the products could be looked into by studying the number of households that entered into the business.

Only 6% of the households were not engaged in the collection and sale of gum and incense. This indicates that there are only little barriers, if at all they exist, to entering into collecting the products. However, the magnitude of entrants as well as the volume of collection might be affected by production conditions.

Labor and collection equipment are mainly involved in gum and incense production, as the production of these products is essentially that of collection. Gum and incense collection is a very delicate activity involving careful picking of the products from the bodies of the trees with the aid of some manual equipment. Differences in the quality of labor are captured by differentiating between the man, woman and child labor involved in the collection. Some households use only one type of labor while others use a combination of the different types of labor. Equal weights could be attached to man and woman labor. However, child labor was supposed to have fewer skills and hence lesser weights were attached, i.e. one for each man and one for each woman’s labor and 0.8 for child labor.

It was supposed that the kind of collection equipment used was associated with the level of wealth of the farmers. Therefore, capital in terms of the size of livestock was taken as a variable representing the difference in the kind of collection equipment used. The kind of labor and the level of capital were correlated to the level of gum and incense collection using Spearman’s Rank Correlation Coefficient.

There existed a very weak positive relationship between the kind of labor used and the amounts of gum and incense collected, i.e. 0.23 for gum and 0.14 for incense. This also shows little child labor involvement—leaving impact of labor quality in manipulating the level of production insignificant. Also the kind of collection equipment used had a very weak positive (0.09) correlation with the levels of both gum and incense collected. This again suggests that there is little difference in the sophistication of collection equipment used across the sample households. However, this argument would strongly hold if the proportion of labor and capital used in the activity was of a considerable amount from the total labor and capital available, and if significant inter household differences exist in the possession of the two factors.

Producers might vary with respect to the proportions of the products they manage to sell in the market. The factors that could bring about such differences could be distance from the market, cost of transport and price received. Distance from the market and cost of transport were regarded as two separate factors because many households use costless transportation methods like carrying the products to the market themselves.

The proportion of gum and incense sale was calculated and its correlation with factors affecting the sales of these products was studied.
The proportion of gum and incense sale was found significantly negatively correlated with distance from the market and cost of transport (Table 5).

Table 5. Correlation between the different factors affecting the sales of gum and incense and proportions of sales of the products, calculated using Spearman’s Rank Correlation Coefficient

<table>
<thead>
<tr>
<th>Factors</th>
<th>Proportion of gum sale</th>
<th>Proportion of incense sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from the market</td>
<td>-0.58*</td>
<td>-0.66*</td>
</tr>
<tr>
<td>Cost of transport</td>
<td>-0.27*</td>
<td>-0.60*</td>
</tr>
<tr>
<td>Price received</td>
<td>0.51*</td>
<td>0.61*</td>
</tr>
</tbody>
</table>

* implies statistically significant coefficient

Source: Survey data

This tells that cost of transport and distance from the market limit the amount households carry to the market for sale. Moreover, the greater figure (in absolute terms) for distance from the market was because, given some money at hand, the cost of walking to the market was more than the cost of paying for any method of transportation. This, in turn, indicates that improving the transport infrastructure could reduce the cost of transportation and encourage people to increase their volume of sales through using paid transport. The price coefficient had positive sign with a higher coefficient for incense than for gum most likely because incense fetches higher prices on unit basis. This implies the possibility of increasing the sale of these products if better price is offered to collectors.

Analysis of actual buyer and seller concentration indicated that markets of high buyer concentration were Degehabour, Gode, and Mustahil (Table 6). Dihun, Gerbo and Gode had high seller concentration.

Table 6. Concentration of sellers and buyers

<table>
<thead>
<tr>
<th>Name of market</th>
<th>Growth of demand</th>
<th>Number of sellers</th>
<th>Major buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gode Market</td>
<td>High</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>Mustahil Market</td>
<td>High</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Qelafo Market</td>
<td>High</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Gerbo Market</td>
<td>No Change</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Degehabour</td>
<td>No Change</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>Segeg Market</td>
<td>No Change</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Dihun</td>
<td>No Change</td>
<td>37</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Survey data

The degree of concentration was higher in the case of buyers than in the case of sellers. This was because of lower degree of specialization in the collection and sale of these products. Nevertheless, there were no significantly influential sellers and buyers except at times of the coming of major buyers. There were no permanently established influential sellers and buyers, and therefore no price-influencing restrictions could be applied. That is, no larger buyers or sellers could
exert significant influence on the level of prices. However, this does not mean that the size of large buyers or sellers never has impact on prices.

**Market price information**
The study revealed that collectors and the marketing middlemen obtain price information from local markets and major towns within and outside the SNRS such as Dire Dawa, Addis Ababa, Hartsheke, Hargessa and Jijjiga. It was learnt that 50% of the primary collectors obtain price and other market information from intermediaries. Whereas, 27% of the primary collectors get such information directly from the market. The rest 23% were found to obtain the information informally from friends.

A well functioning market system was perceived as one where nearly all the participants get information from one source. But, getting price and other market related information from diversified sources with likely diversified information, as in this case, could cause information asymmetry which was identified to be a possible cause for market failure and thereby production and marketing inefficiency.

**Market performance**

**Marketing margin:** The total marketing margin was calculated to constitute the marketing costs plus profit earned by the different participants in the system. The marketing costs are amounts reported by the marketing middlemen as costs that include the opportunity cost of labor plus other costs like costs for transportation. The range of profit margin was between Birr 0.25 and Birr 2.00, which is nearly 25% of the price (Table 7).

<table>
<thead>
<tr>
<th>Market</th>
<th>AVG profit margin/Kg</th>
<th>AVG price/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gode</td>
<td>0.50</td>
<td>2.80</td>
</tr>
<tr>
<td>Mustahil</td>
<td>0.25</td>
<td>3.20</td>
</tr>
<tr>
<td>Qelafo</td>
<td>0.25</td>
<td>3.50</td>
</tr>
<tr>
<td>Gerbo</td>
<td>2.00</td>
<td>3.90</td>
</tr>
<tr>
<td>Degehabour</td>
<td>1.16</td>
<td>2.80</td>
</tr>
<tr>
<td>Segeg</td>
<td>1.75</td>
<td>4.00</td>
</tr>
<tr>
<td>Dihun</td>
<td>2.00</td>
<td>4.21</td>
</tr>
</tbody>
</table>

**Market integration analysis:** Another indicator used to study market performance was the extent to which the market of our concern is integrated. The essence of this analysis laid in the relationship between market nature and production and marketing efficiency. Non-integrated markets may convey inaccurate price information that might distort producers' marketing decisions and contribute to inefficient product movements.
Market (price) integration is a function of spatial (across markets) and temporal (over a given period of time) homogeneity of prices. The cross-sectional nature of our data did not allow us to study the degree of homogeneity of prices over time. Our analysis would, therefore, focus on price behavior across markets.

Price comparison was made at three levels: price differentials between prices of those who sell to intermediaries and prices received in the local market; prices revealed in the different major markets; and prices fetched by the different product types in the different markets.

Based on the kind of marketing channel they used to sell their products, the households were grouped as those who sell their products to intermediaries and those who carry products to the market.

There were significant differences between the average unit prices received by those who sell their products in the market and those who sell them to market intermediaries (see Fig. 1). This shows that even within the non-specializing class of sellers, there are price differentials. Therefore, intermediaries are not merely enjoying the economies of specialization but also they are making huge profit on the basis of unit price. Thus, it would be sound to argue that there exist selective market failures (situations whereby markets are delivering different benefits, in this case different prices, to different people, usually to those having differential access to resources) for some households—presumably for those who are relatively deprived of some resources. Producers who sell their products to intermediaries earned prices of 2.3 Birr/Kg for gum and 3.7 Birr/Kg for incense. Whereas, those who sell to local markets earned prices of 2.8 Birr/Kg for gum and 4.1 Birr/Kg for incense. This indicates that producers who sell to local markets earn better prices than those who sell to intermediaries.

The situation could be studied from efficiency and welfare viewpoints too. Regardless of which economic class faces selective market failure, the existence of market fragmentation in the market seems to be a signal of inefficiency. If different farmers receive different prices for essentially similar products, they would enjoy different benefits and, therefore, would be motivated to different degrees to produce. Here, we are not denying that quality differences might exist. However, quality differences may not exist between products sold to the market and those sold to intermediaries. This obviously indicates economic sub-optimality.

Moreover, 65% of the households (Fig. 1) were engaged in the sale of produces to intermediaries. This could be a clear indication that market failures are affecting the welfare of the community and thereby of the country in a very sub-optimal way.

The second level analysis of market integration dealt with price comparison across the different markets. A mean difference test of average prices of gum and incense across different market places revealed that prices were not significantly
different. The highest price was 4.50 Birr at Mobak, and the least 2.80 Birr at Gode and Degehabour Markets (Table 8).

Table 8. Prices at the major gum and incense markets and price variations therein

<table>
<thead>
<tr>
<th>Market</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gode</td>
<td>2.80</td>
<td>0.32</td>
</tr>
<tr>
<td>Qelafo</td>
<td>3.50</td>
<td>4.60</td>
</tr>
<tr>
<td>Mobak</td>
<td>4.50</td>
<td>2.12</td>
</tr>
<tr>
<td>Dihun</td>
<td>4.21</td>
<td>3.40</td>
</tr>
<tr>
<td>Degehabour</td>
<td>2.80</td>
<td>0.28</td>
</tr>
<tr>
<td>Jijjiga and Artshiek</td>
<td>3.28</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Source: Survey data

The third level of study of price integration dealt with the degree to which prices were integrated across the major district markets in the three zones studied. The price range between the different-colored products was from Birr 0.50 to Birr 11.00 (Table 9). This could partly be due to quality differences. The same quality (in terms of color) of a product, however, fetched different prices across districts and further across zones.

Table 9. Average prices of different-colored gum and incense products at major market places of each district of the SNRS (except for markets of Degehabour and Jijjiga)

<table>
<thead>
<tr>
<th>Type</th>
<th>Color</th>
<th>Price (Birr) across districts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dihun</td>
</tr>
<tr>
<td>Myrrh</td>
<td>Black</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>Grayish</td>
<td>6.12</td>
</tr>
<tr>
<td></td>
<td>Reddish</td>
<td>6.25</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Yellow + Red</td>
<td>--</td>
</tr>
<tr>
<td>Frankinse</td>
<td>Black</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>White + Black</td>
<td>--</td>
</tr>
<tr>
<td>Commiphora guoditti</td>
<td>Grayish</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Reddish</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>Yellow + Red</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Survey data

At the district-level comparison, price ranges of 2.00-4.50 for black varieties, 10.00-11.00 for reddish varieties, and 6.12-7.00 for greyish varieties were recorded. Yellow and White types assumed no price differentials across markets (Table 9). Therefore, differences of prices at district level could be accounted for the vicinity of the different district markets to the major market places.
(transportation costs) and other quality parameters like grain size and proportion of foreign matters.

The different zonal-level comparison of prices revealed that yellow types assumed the highest range (6.00 Birr at Gode and 11.00 Birr at Mustahil) followed by Black type (0.50 Birr at Dihun and 5.00 Birr at Mustahil), Reddish (3.00 Birr at Dihun and 7.00 Birr at Gebro), Grayish (3.00 Birr at Dihun and 7.00 Birr at Gebro), and White (3.00 Birr at Dihun and 7.00 Birr at Mustahil). Such a difference could be accounted for either zonal quality differences within the same type (color) or differences in transportation costs to the market spots.

Comparing our earlier observation on range differences in district-level prices with our latter zonal-level differences, the range has definitely widened in the latter case. As the possible difference due to distances the products are brought from was taken care of in the earlier analysis, the widened gap could be due to difference in quality parameters other than color differences in the products brought from the different zones.

Prices at the major markets were, in some cases, lower than prices at different districts on average possibly for two reasons. One, the higher level (major) markets were supposed to work better than the lower level (district) markets. Two, with relatively sufficient flow of information, higher number of parties in the market and more competition, prices were likely to be pushed down in the major markets than at relatively stagnant satellite markets.

In cases where the market is well integrated, products are expected to flow from lower to higher pricing markets until they are equated in both markets. However, buyers and sellers may not act accordingly if information does not flow well between the two markets. Even assuming a sufficient information flow, structural factors like method of collection, drying and transportation costs might impede actors from conducting marketing activities at the right location or where reasonably higher prices are fetched.

CONCLUSIONS

The SNRS, and the study areas in particular, are generally characterized by a low-income, agro-pastoralist economy. Gum and incense are highly commercial products which can be consumed either directly or in a processed form. They make a significant income share for the producers and are therefore very important for the socioeconomic life of the region.

The consumption patterns of the products in the study areas indicated that the residents were mostly self-sufficient. On top of this, even the local consumption was based on processed products—indicating the potential of the products in
serving as raw materials for industrialization, which the country is aspiring to achieve. Processing of the products is, therefore, one venture where industry could flourish in the region.

The market was characterized as having a very long channel. The typical marketing channel was found to start from exchange where producers sell the products to intermediaries. The intermediaries carry the products to established sellers in the local market. The local market transfers the products to the district and larger zonal markets. Collectors from the zonal and regional markets carry the products to national level seller agencies from which products are carried to final consumers directly or through brokers.

Little barriers to entry characterized production and marketing of the products in the initial stage. Any interested resident in the study area could join the venture. When it comes to selling the products in the local market, however, distance from the market and cost of transportation were found to be barriers to high proportion of sales of the two products. Improving transportation could reduce price differentials and increase production and productivity.

The markets for gum and incense also suffered from lack of timely and reliable information which serves a lot in terms of economic efficiency and performance. Although the magnitude of production and marketing inefficiency could not be traced from the available information, the fragmented marketing information system in the area was supposed to act as a serious stumbling block to production and marketing efficiency even on local market basis. Improvement of the delivery of information to producers and to marketing middlemen could, therefore, be one area of intervention.

The benefit from entering into the business of marketing the products was found to be highly attractive. Moreover, the different personnel across the marketing channel were not found to be influential one another—leaving the prices to be determined more or less by market forces. This shows the potential for expansion of the production and marketing of gum and incense if some production and marketing constraints are done away with.

The market integration analysis was run at three levels. Prices received from intermediaries at the local market were significantly different. This was supposed to result from lack of access to resources necessary to carry the products to local markets and inefficient information flow. The local market was, therefore, found disintegrated.

The prices in the major markets were found almost similar. However, comparison of the district-level price showed differences in prices between different quality products and even within similar products with respect to quality. This also shows inefficient flow of price information across district markets. Our test of price integration between district and major market prices indicated a severe market fragmentation. Such outcomes were in turn results of well-
developed transportation facilities, absence of information system for the dissemination of accurate price, and other relevant sets of market information.

Correcting the information and transportation problems could improve the working of the market to a great extent. Right price signals would encourage more production, work towards the betterment of the socio economic life of the region, and thereby play a great role in the development of the country. Given the benefit it brings about in improving the workings of the market, the delivery of marketing information and transportation services would be an attractive area of investment. However, because of the exclusion problems in information and transportation activities, public investment would be more encouraging than private ones.

References

Natural Gum Marketing and Processing Enterprise. 1998. Natural Gum Marketing and Processing