

A MONTHLY PUBLICATION OF THE TROPICAL LEGUMES II PROJECT

About the Bulletin

The Bulletin of Tropical Legumes is a monthly publication of the Tropical Legumes II (TL II) project, funded by the Bill and Melinda Gates Foundation, and jointly implemented by the International Crops Research Institute in the Semi-Arid Tropics (ICRISAT), the International Center for Tropical Agriculture (CIAT) and the International Institute of Tropical Agriculture (IITA) in close collaboration with partners in the National Agricultural Research Systems of target countries in Sub-Saharan Africa and in India. TL II aims to improve the livelihoods of smallholder farmers in drought-prone areas of the two regions through enhanced grain legumes productivity and production.



Leveraging Legumes Paying Dividends – The Ethiopian Example

Background

Ethiopia is home to about a dozen species of tropical grain legumes. An estimated 1.5 million ha of land is planted to grain legumes in this country and more than 1.9 million metric tons (MT) of grain produced each year, touching the lives of about 10 million households (Table 1). Faba bean, common bean, chickpea, and field pea combined account for about two-thirds of area planted to all legumes in Ethiopia¹. Perhaps with the exception of soybean, grain legumes have been produced for centuries in this country and provide the much needed protein supplement to the diet of rural households, which otherwise includes mainly cereals or root crops. Ethiopian farmers are also cognizant of the role of legumes

in improving soil health, and widely use them in rotation with cereals.

Commercialization of grain legumes in the country started in the early 1970s. The Ethiopian Institute of Agricultural Research (EIAR) and other institutions (agricultural universities and regional agricultural research institutes) have collaborated with the CG Centers, mainly CIAT (common bean), and ICRISAT and ICARDA (chickpea), and developed improved varieties and crop management technologies. The common bean program released a total of 28 improved varieties of food and export type beans between 1973 and 2006; similarly, the chickpea research program has 15 varieties released to its credit during the period from 1974 to 2006. However, the improved varieties and production technologies have not been widely adopted and crop yields for both crops have remained below the 1 ton per ha level until recent years.

¹ The FAO data also includes an estimated 40,000 ha for groundnut in Ethiopia; other minor legumes with local importance include cowpea, lima bean and mung bean.

Table 1: Status of tropical legumes production in Ethiopia (2008-10 averages)

Crop name		1000 HH ²	1000 Ha	Kg/Ha	1000 MT	Percent of area
English/common	Scientific					
Faba bean	<i>Vicia faba</i>	3661	503	1335	668	34.1
Common bean	<i>Phaseolus vulgaris</i>	2287	249	1385	344	16.9
Chickpea	<i>Cicer arietinum</i>	948	218	1407	307	14.8
Field pea	<i>Pisum sativum</i>	1514	220	1153	253	14.9
Grass pea	<i>Lathyrus sativus</i>	706	142	1434	202	9.6
Lentil	<i>Lens culinaris</i>	676	93	1070	100	6.3
Fenugreek	<i>Trigonella foenum-graecum</i>	465	23	1205	28	1.6
Lupine	<i>Lupinus album</i>	100	20	1293	26	1.3
Soybean	<i>Glycine max</i>	67	8	1336	12	0.5
Total/avg.	-	10424	1477	1291	1940	100.0

Source: Calculated from Central Statistical Agency of Ethiopia (CSA: www.csa.gov.et)

EIAR spearheaded the introduction of a systems approach that involved cultivating partnerships with several actors along the value chain, especially farmers, farmers' cooperatives, and input suppliers during the first half of 2000s and registered successes in pilot areas. TL II provided the much needed resources for capacity building and expertise for scaling up available technologies and further research, starting in 2007. The work has expanded beyond the pilot areas and covered large number of sites in many parts of the country. The common bean work has been carried out in the central rift valley of Ethiopia, in West and East Hararge zones, and parts of southern Ethiopia. The work on chickpea included three *weredas* (districts) of Gimbichu, Lume-Ejere, and Minjar-Shenkora in East Shewa, central Ethiopia; there was also further expansion into the Debre Berhan area and Denbia *wereda* in north-central and northern Ethiopia, respectively, starting in the 2010/11 season.

Outcome and Impact

Available data show significant progress for the two crops – common bean and chickpea – that TL II has been involved in Ethiopia. Significant positive changes have been witnessed in terms of numbers of rural households growing the crops, crop productivity and production, as well as volumes and value of export.

2 HH=households growing the crop.

Number of households

There were approximately 146,000 more households growing common bean in the 2008-10 seasons in comparison to the 2004-06 average. This is an average annual growth of about 1.3%. In a similar fashion, there were approximately 81,000 more households growing chickpea during the same period, a 4.8% growth per year.

Productivity and production

Average area, yield, and production of common bean grew by 3.2%, 10.8% and 14.3%, respectively (Figure 1). In other words, there was an average of 38,000 ha of more land planted to common bean in the 2008-10 seasons than the average for 2004-06; 484 kg per ha increase in yield; and 153,000 MT of more grain produced. By the same token, area, yield, and production for chickpea grew by 3.4%, 7.2%, and 10.9%, respectively (Figure 2). That is, there was nearly 29,000 ha of more land planted to chickpea; 313 kg per ha of yield increase; and nearly 98,000 MT of more chickpea produced in 2008-10 compared to 2004-06. It is very important to mention here that the increases in production for both crops are attributed more to the increases in productivity (yield per unit area) rather than to expansion in area.

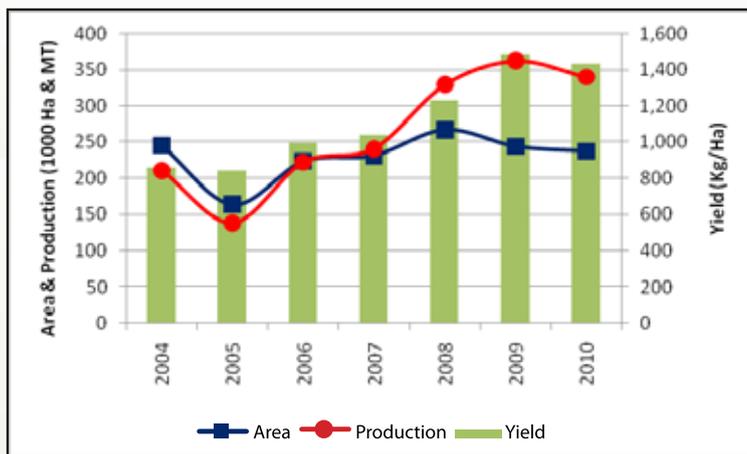


Figure 1: Common bean production trends in Ethiopia (source: CSA: www.csa.gov.et)

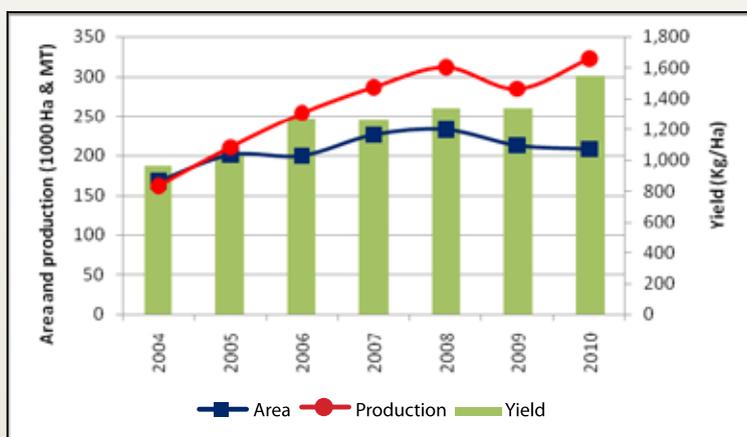


Figure 2: Chickpea production trends in Ethiopia (source: CSA: www.csa.gov.et)

Impact on export

Ethiopia is the largest exporter of both common bean and chickpea in Africa. The average annual export between 2005 and 2010 for common bean was 65,706 MT, with an estimated annual value of US\$ 36.84³ million. Both volume and value showed steady increases since 2008 (Figure 3). The annual rate of growth for volume is estimated at 7.4%. Export destinations included a total of 75 countries and territories. Yemen, United Arab Emirates (UAE), UK, Pakistan, S. Africa, The Netherlands, Sudan, India, Italy, and Belgium, combined, accounted for 68.4% (range: 12.3%-3.8%) of the total

common bean export volume. In a similar fashion, the average annual chickpea export was 34,308 MT, with an estimated annual foreign currency earnings equivalent to US\$ 20.93 million each year between 2005 and

2010. Both the volume and value for chickpea showed more accelerated growths than those for common bean (Figure 4). Destinations of Ethiopian chickpea export include 32 countries in Asia, the Middle East, Africa and Europe. Pakistan, UAE, and Sudan accounted for about 34%, 27%, and 14% of the total volume. Bangladesh, India, Singapore, Saudi Arabia, Djibouti, Israel, and Jordan were among the top 10 destinations for Ethiopian chickpea export.

For many smallholder farmers this meant improved income, food security, nutrition, and investment in businesses such as seed production and livestock. Overall, the increased productivity and production has helped Ethiopia to increase its revenue and diversify exports, instead of relying totally on traditional export crops such as coffee. The recent hikes in agricultural commodity prices have also helped the increased earnings from common bean and chickpea exports.

The lesson from the Ethiopian example is that accelerated growth in tropical legumes productivity and production can be achieved where there are technologies that address

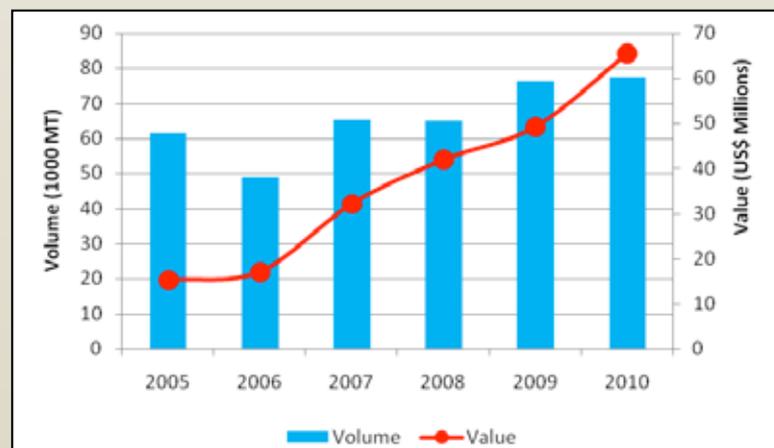


Figure 3: Volume and value of common bean export in Ethiopia (calculated from Ethiopian Customs Agency)

³ US\$ 1 = ETB 9.96 exchange rate for December 2008

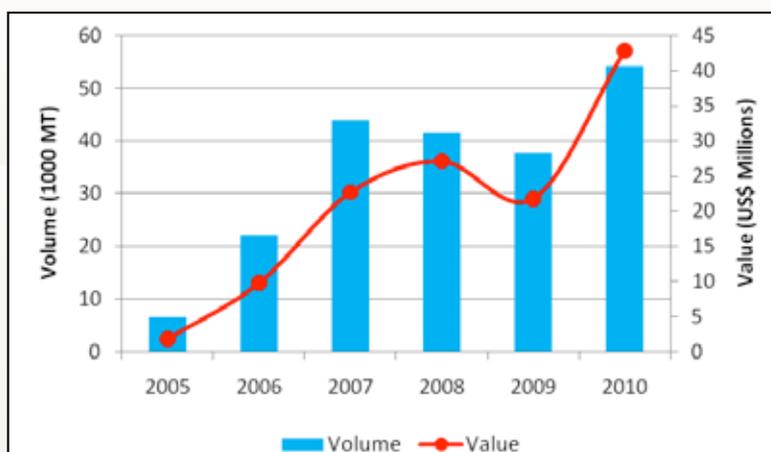


Figure 4: Volume and value of chickpea export in Ethiopia (calculated from Ethiopian Customs Agency)

the needs of smallholder farmers; well organized research system with adequate capacity and commitment; effective partnership; value

chain approach; and market availability, among others. The Ethiopian tropical legumes are destined to register further successes.

The recently introduced grades and standards for common bean are expected to help farmers get premium prices; grades and standards are also being introduced for chickpea. Community-based seed system has been established for both crops and is helping to address the issue of improved seed supply. Small-scale seed cleaning machines are being made available to community seed producers in some parts of the country as part of a crop diversification project funded by the Italian government and being implemented by FAO. TL II has also established partnership with P4P of World Food Program and NGOs such as CRS for collaboration in policy issues.

News and Events

TL II launches initiative with aWhere

Dr. John Corbett, President and CEO of aWhere (a US-based private company that develops and provides location intelligence software solutions for projects and businesses), visited the TL II coordination office at ICRISAT-Nairobi from 25-28 July 2011. John held consultations with TL II team and other stakeholders and made demonstrations on the services provided by the company – including weather forecasts and data manage-



ment tools. The TL II team understands that the tools provided by aWhere are very useful for establishing data management systems and location-intelligence M&E, starting from the early stages of Phase 2. Further consultations are planned for 7 September 2011 at the ICRISAT HQ in India.

Chickpea workshop in India

The TL II Project Review and Planning Workshop for chickpea in India is scheduled for 5-6 September 2011. It will be held at the ICRISAT-Patancheru campus, Hyderabad, India.