Teff: An Emerging Ethiopian “Superfood”

Introduction

A tiny, nutritious grain that has been quietly cultivated for millennia in the Horn of Africa has suddenly been catapulted into the international limelight.

Teff, the beloved millet-like cereal preferred for making the staple injera flatbread in Ethiopia and Eritrea, is increasingly being touted as the next big “super-food.” Naturally gluten-free and high in fiber, calcium, vitamin C and protein, its new label is undoubtedly well earned.

The burgeoning global obsession with the grain is putting the spotlight on the teff sector in Ethiopia, the only country that produces the good in significant amounts, but where production shortfalls have led the government to ban exports of raw teff. This piece will examine teff production and consumption trends in Ethiopia, and consider if their current trajectory may allow for the lifting of the 2006 export ban. It will also explore teff consumption trends beyond Ethiopia, and offer insight into a similar “super-food” phenomenon on the other side of the world.

Teff Production in Ethiopia

Like almost every other crop in Ethiopia, teff is produced overwhelmingly by smallholders, who farm 96% of the total land dedicated to growing the crop. ¹ These farmers, who number upward of 6 million, have managed to more than double their production of teff in the past decade. In 2002, production was roughly 1.63 million tons, compared to nearly 4 million tons in 2013.² This substantial increase has been due to the expansion of land dedicated to teff cultivation, along with a broad increase in yields.

In the 2003-2004 season, 1.99 million hectares were dedicated to growing teff, compared with 2.7 million hectares in the 2011-2012 season—translating to an increase of about 37%. Yields have also grown steadily, from an average of 0.8 tons per hectare in 2003-2004 to 1.3 tons per hectare in 2011-2012.³ Although teff can be grown in a wide range of conditions and environments, these yield figures are still quite low, even when compared with yields for other grains in Ethiopia: over a similar period of time (2002 to 2010), maize yields averaged 2.29 tons per hectare.⁴ This is in part due to the labor-intensive harvesting that teff demands. Still, more land is dedicated to growing teff than any other grain in the country, highlighting the relative importance of the crop. Higher maize yields mean, however, that in terms of quantity, more

1 Alemayehu Seyoum Taffesse, Paul Dorosh Sinafikeh Asrat. “Crop Production in Ethiopia: Regional Patterns and Trends”. International Food Policy Research Institute.
3 CountryStat. www.countrystat.org/eth
The dramatic increase in production has been far from fortuitous—the Ethiopian government has identified teff as a “target crop” and dedicated significant resources to boosting its production. The Agricultural Transformation Agency (ATA), established by the government in 2010, has played a particularly central role in the effort. Specifically, the agency has worked with thousands of smallholders to implement more effective farming techniques (such as row planting), and offer them access to better agricultural inputs, including improved seed varietals. Row planting is a particularly powerful tool, as studies have shown that the practice can increase yields by up to 70%.

Teff demand in Ethiopia

Demand for teff is high and continues to grow in Ethiopia, with consumers consistently demonstrating that they prefer to buy the grain whenever they can afford to do so, despite the fact that it is more expensive than all other major grains. Demand is expected to continue to grow, as not only the population booms—from about 66 million in 2000 to over 94 million in 2013; but also as incomes rise.

Most teff consumption tends to happen in cities, where inhabitants consume an average of 61 kg/year per capita, compared to 20 kg/year per capita in rural areas. This is largely due to income discrepancies between urbanites and rural-dwellers—as teff is the most expensive of the major grains in the country. But, Ethiopian demographics are changing in a way that will continue to push demand even higher in coming years. The rate of urbanization, 3.57%, is one of the highest in the world, and the middle class is growing rapidly as the Ethiopian economy continues to boom. The reported per capita GDP skyrocketed from $518.14 in 2000 to $971.37 in 2012.

Indeed, demand for teff is growing much faster than production, driving up prices considerably. As the below chart shows, teff prices in Ethiopia had been rising steadily in the first part of the decade. Then, around 2008 the price skyrocketed—from an average of $471.73/ton in 2007 to $843.4/ton in 2008, and to $726.72 in 2009. This coincides with the global commodities crisis, when the price of globally traded commodities, including food, skyrocketed everywhere in the world.
And yet, teff—being grown on a significant scale only in Ethiopia, and its export banned by the government since 2006—was not a globally traded commodity. However, the prices of all goods being imported into Ethiopia, including refined petroleum, palm oil, and wheat, increased dramatically and suddenly. As a result, inflation in the country—which had already been worrying onlookers—soared. In 2007, consumer price inflation was an already worrying 17.23%, but in 2008 rose to 44.4%. A secondary, smaller, price spike in 2012 was in large part the result of a major East African drought in the 2011-2012 season.

Lower-income Ethiopians, who are finding it harder to afford teff, have been forced to substitute cheaper grains like maize and sorghum in order to make the staple injera flatbread. Sorghum has a negative income elasticity of -0.81, meaning that when incomes rise, consumers buy significantly less of it. Meanwhile, teff has an income elasticity of 1.14, meaning that when incomes rise by 1%, consumer spending on teff actually increases by more than 1%, conveying the depth of consumer preference for teff.

Teff policies
In the early 2000s, the price of staple goods was growing alarmingly quickly in Ethiopia — the result of increasing prices for agricultural inputs and worrying inflation rates. The surge in grain prices in particular was so drastic that the Ethiopian government, in its attempt to keep staples affordable for its population, decided to ban the export of all grains. The decision meant that not only was the export of teff prohibited, but so was that of sorghum, wheat and maize.

Although the ban was subsequently lifted for sorghum, and temporarily lifted (but reinstated) for maize, the ban on raw teff exports remained, and remains, constant. A small amount is smuggled through Djibouti, mainly to Middle Eastern markets with significant Ethiopian populations. Prices of this clandestine teff tend to be much higher than domestic prices—an estimated $1,000 per ton in 2009, and just under $900 a ton in 2010 (domestically, wholesale prices in those years were US$ 727 and US$ 486, respectively).

Although the export of raw teff remains illegal, the export of processed teff, specifically in the form of injera bread is not only permitted, but booming. Ethiopian firms export the good globally, targeting countries with large populations of Ethiopian immigrants, particularly the United States.

Global teff demand and opportunities

Globally, demand for teff is skyrocketing. Some of this demand has been for prepared injera, with Ethiopian exporters of the bread like Lemlem and Mama Fresh Injera reporting extremely optimistic growth projections and scrambling to ramp up their operations to meet growing demand. Although some onlookers have blamed this growth in processed exports for domestic price increase, the correlation between the two is likely overstated, as the proportion of teff dedicated to exported injera is low.

Most new consumers, however, are not looking for prepared injera bread, but rather for teff flour, which can be used as a more nutritious substitute for traditional grain flours. As Ethiopia does not allow for the export of raw teff, global demand for the grain and its flour thus far has been satiated by small-scale production operations in the US and Europe. In the Netherlands for example, Consenza sells gluten-free products made from locally produced teff, while in the US the teff market is dominated by Idaho-based The Teff Company. Although farmers in Oregon, Kansas and Washington State have also begun to grow teff successfully, The Teff Company has been selling teff flour to Ethiopians and Eritreans in the US for roughly 30 years, and its goods fetch prices ranging from $6.25 per pound to $2.60 per pound; the lowest price being offered for bulk purchases of 25 pounds. Despite the fact that Ethiopian agro-environmental conditions are proven to be optimal for teff cultivation, farmers in Western countries have been able to achieve significantly higher yields of close to 3 tons per hectare.

If the average of these two extremes is considered—$4.43—then the calculated price per metric ton is $9,755. This is compared to the average national retail price in Ethiopia, which in 2013 was $0.37 per pound (15.53 ETB/kilo) for the most expensive, premium white teff variety. This translates to a retail price of $803.35 per ton—less than one-tenth of the price that the grain retails for in the United States.

Another “superfood”

As a highly nutritious, relatively obscure crop from the developing world thrust into the international limelight, onlookers were quick to make the obvious comparison between teff and quinoa. Quinoa, grown in Andean Peru and Bolivia, is high in protein, magnesium, essential amino acids, and other nutrients. It has been consumed for centuries by rural indigenous populations, although the extent to which it was consumed by non-indigenous urbanites was somewhat limited. Once the gluten-free grain alternative was “discovered” as a superfood by consumers in countries like the US, demand skyrocketed and farmers in Bolivia and Peru—who were the only ones making quinoa in significant quantities—ramped up production.

In Bolivia, production more than doubled in the period between 2002 and 2012, and the value of quinoa exports grew from slightly over $2 million in 2002 to close to $80 million in 2012. In Peru, 2012 exports were about $31 million, while 2013 exports swelled to $72 million. Incomes have grown substantially for quinoa farmers in the two countries, and the status of the health food was further boosted when the UN declared 2013 the “International Year of Quinoa.” Some critics have pointed to the rise in domestic quinoa prices as a cause for concern, arguing that it is becoming increasingly out of reach for domestic rural populations—precisely those who used to be the sole consumers of quinoa.

Conclusions

The teff story is wholly different to the quinoa story, however. The Ethiopian government is well aware of the size of the domestic teff market, and has already shown that it will prioritize domestic demand over potential export opportunities. This is because teff is much more of a nationally critical crop in Ethiopia than quinoa is in either Peru or Bolivia. Teff production is growing as a part of a long-standing, long-term national effort supported by policy, whereas efforts to increase production of South American quinoa is comparatively unorganized and reactive. If current trends in Ethiopian
Teff production continue, producers should be able to meet domestic demand and even get production to a level that would convince the government to change its stance on the export ban.

The opportunities that would arise through the legalization of teff exports would be vast. The gluten-free market in the United States alone was worth an estimated $10.5 billion, according to market research firm Mintel, and growing quickly. Although teff is currently being produced in relatively small quantities in the US and Europe, Ethiopian exported teff would naturally undercut Western producers, due its lower costs of production, or it could market itself as a more premium and “authentic” form of the good, and fetch even higher prices in international markets. Opportunities around teff are promising and exciting—so much so that it would hardly be surprising if the UN declared 2015 the “International Year of Teff.”