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Feed the Future Innovation Lab for Food Security Policy

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Trends in West African Pesticide Markets

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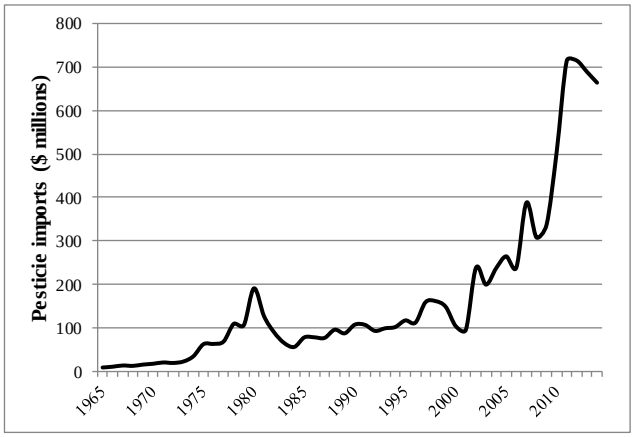
Market overview

West African countries import roughly $900 million worth of pesticide products each year (Table 1). Because most suppliers do not manufacture pesticide active ingredients domestically, these import figures provide the best available estimate of wholesale market value.

In terms of product composition, herbicides dominate, accounting for over 60% of total pesticide use (Table 1). Herbicides kill weeds and thus substitute primarily for hand weeding labor, which has historically dominated farmers' weed control efforts. Insecticides account for a further 26% of pesticides used. Fungicides and other pest control products, such as nematicides and rodenticides, account for the remaining 12% of pesticides applied by West African farmers.

Figure 1. Pesticide import trends in West Africa



Source : COMTRADE (2017)

Key Findings

- Pesticide markets have grown rapidly in West Africa over the past decade and a half.
- Falling world pesticide prices, together with increasing domestic farm labor constraints and associated pressures to intensify agricultural production, have fueled farmer interest in increasing input use, particularly of herbicides.
- Regulatory capacity has not kept pace with the rapid proliferation of pesticide products, markets and traders.
- As a result, pesticide market growth has led to three emerging regulatory issues:
  1. Appearance of unregistered and counterfeit products in some markets.
  2. Uncertainty about pesticide product quality.
  3. Health and environmental impact, which remains largely unmonitored.

Table 1. Pesticide imports into West Africa, 2015*

	Imports	
Pesticide products	$ billions	percent
Herbicides	552	62%
Insecticides	229	26%
Others**	104	12%
Total	885	100%

* average, 2014 to 2016

** fungicides, growth regulators, rodenticides, nematicides

Source: COMTRADE (2017), FAOSTAT (2017).

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Rapid growth

Pesticide markets have grown rapidly in West Africa, particularly since 2005 (Figure 1). The region's three largest agricultural input markets -- Nigeria, Ghana and Côte d'Ivoire -- have experienced a pronounced jump in pesticide imports (Table 2). In part, this rapid growth in coastal markets may result from bulk imports of active ingredients which get formulated and retailed both domestically and in the smaller landlocked countries of the interior.

Table 2. Trends in annual pesticide imports in West Africa ($ millions, 3-year centered averages)

	1995	2005	2015
Large markets			
Nigeria	16	49	457
Ghana	18	91	189
Côte d'Ivoire	22	34	132
Medium-sized markets			
Mali	15	23	40
Burkina Faso	7	23	20
Senegal	8	11	15
Guinea	2	4	10
Small markets*	37	34	62
West Africa total	110	246	885

* Benin, Cape Verde, Chad, Gambia, Guinea Bissau, Liberia, Mauritania, Niger, Sierra Leone and Togo.

Sources: COMTRADE (2017), FAOSTAT (2017).

Growing markets, in turn, have led to a proliferating number of traders. In Côte d'Ivoire, the number of registered pesticide importers has increase from 12 in 2000 to 67 in 2016. The number of pesticide retailers and applicators appears to have increased even faster (Table 3). In addition to the officially registered traders, large numbers of unregistered pesticide retailers operate in most West African markets (Figure 2).

The number of registered pesticide products has likewise increased rapidly. Time-series data available from Ghana, Guinea and the Sahelian countries indicate that the number of new pesticide products authorized for sale has grown at over 10 percent per year over the past decade (Table 4).

Figure 2. Bicycle repair shop sells pesticides, Mali

Source: Haggblade et al. (2016).

Table 3. Trends in the number of registered pesticide traders and applicators

	2000	2016	annual growth rate
Côte d'Ivoire			
importers	12	67	11%
retailers	113	779	13%
applicators	44	396	15%
Guinea			
importers	2	21	16%

Sources: Traore and Haggblade (2017a, 2017b).

Glyhposate, the most commonly used herbicide in West Africa, illustrates the rapid pace of new product introductions. In Ghana, glyphosate product registrations have jumped from an average of 2 per year in the early 2000s to a dozen annually in recent years. In Côte d'Ivoire, glyphosate product registrations have increased by a factor of five, from 4 per year in the 2005 to 23 per year in 2015. Today, the Sahelian countries have registered a total of 39 glyphosate products for sale, (Figure 3) while Ghana has registered 70 and Côte d'Ivore 147 glyphosate products. As a result, farmers face a bewildering array of choices.

Table 4. Number of pesticides products with valid registration numbers as of December 31 each year

Regulator	Number of products registered			annual
pesticide prod	1995	2005	2015	growth rate
Comité Sahélien des Pesticices (CSP)				
Herbicides	2	38	144	15%
Insecticides	17	88	172	8%
Others*	0	1	16	17%
All pesticides	19	127	332	11%
Ghana, Environmental Protection Agency (EPA)**				
Herbicides		36	212	10%
Insecticides		49	205	9%
Others*		17	64	10%
All pesticides		7	27	21%

* Fungicides, growth regulators, rodenticides, nematicides

** Ghana data refer to 2006 and 2015

Sources: Diarra & Tasie (2017), Haggblade et al. (2017).

Figure 3. Profusion of glyphosate brands sold in West Africa

a. Roundup and its imitators (above)

b. The « Red Berets », Glycel and imitators (above)

Drivers of growth

Three broad forces are driving this rapid growth in pesticide use by West African farmers. .

1. Falling global pesticide prices

Global pesticide prices have fallen significantly over the past several decades. Glyphosate prices, for example, have fallen by over 50% worldwide. This downward trend results from the expiration of patent protection for major pesticide active ingredients and the subsequent release of cheap generic competitors (Table 5). Throughout Africa, many of these generics now come from China. As a result of expiring international patents, generic pesticides now account for about 80% of all sales globally. Hence the growing profusion of differing brands selling the same active ingredient (Fig. 3).

Table 5. Average retail prices in Mali (CFAF/liter)

Glyphosate brand	2010	2015	change
Kalach 360	4,313	3,125	-28%
Roundup 360	4,938	4,375	-11%

Source: Observatoire du Marché Agricole (OMA).

2. Rising farm labor costs

Over the past several decades, rapid urbanization has increasingly pulled rural labor off the farm and into West Africa's growing cities and towns. Agricultural input traders and regulators throughout the region highlight the impact of growing rural labor shortages on herbicide demand among even small farmers. In Mali, the combination of falling herbicide prices and rising rural wage rates means that farmers in southern and central Mali now find that herbicides allow them to control weeds at half the cost of hand weeding labor.

3. Agricultural intensification

Population pressure simultaneously produces more mouths to feed and less land for farming. As population grows and as fields become smaller from generation to generation, farmers must produce more food on less land. As a result, African farmers face inexorable pressure to intensify production.

Intensification requires both fertilizer and pesticides. Increased fertilizer use without insecticides, for example, may simply result in greater crop losses. Similarly, increased fertilizer use in the absence of good weed control results in healthy weeds and minimal yield gains. As a result, fertilizer and pesticides are complementary inputs. Over time, growing land pressure will continue to provide a long-term stimulus to increased pesticide use on West African farms.

Emerging issues

1. Unregistered products and traders

Traders and regulators throughout West Africa report that the number of registered pesticide traders has increased rapidly since 2000. Unregistered pesticide traders have entered the market as well. Often seasonal sellers of pesticides, their numbers have increased possibly even faster than the registered sellers.

Unregistered pesticide products have also begun to appear in many West African markets (Figures 3 and 4). Their prevalence varies considerably, both temporally and spatially. During the civil war in Côte d'Ivoire, stakeholders estimate that as much as 30% of the national market was supplied by Ghanian pesticides, unregistered in Côte d'Ivoire, and smuggled across the border. Since the fighting ended in 2009, the share of illegal imports has fallen to 5-10% of the Ivorian market. A regional study conducted in 2012 estimated an average market share of 35% for unregistered pesticides, although the share varied widely across countries.

2. Product quality and safety

Farmers and traders complain that the proliferation of brands, many of them unregistered, lead to wide variations in pesticide quality and widespread suspicion of under-dosing of active ingredients.

An absence of accredited testing laboratories complicates verification of these complaints. In our studies, we could not find a single West African laboratory accredited for formulation verification under the relevant international standard ISO 17025. One laboratory, the LANADA laboratory in Côte d'Ivoire, is currently in the advanced stages of ISO accreditation, and they hope to receive final certification by the end of 2017.

Figure 4. Repackaged pesticides sold in Gambia

Source: Diallo and Tasie (2017).

3. Health and environmental monitoring

Growing pesticide use, along with increased volumes of unregistered and counterfeit products, leads to mounting concerns about product quality and safety. Yet the environmental impact of pesticide use remains poorly monitored in many West African countries. Looking forward, policy makers will increasingly require better monitoring of pesticide product quality and environmental impact by regulatory agencies.

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