Implementing Regional Pesticide Policies in West Africa During a Period of Rapid Market Growth:
Achievements, Challenges and Opportunities

Amadou Diarra and Steven Haggblade
Presented to the USAID, Washington, DC
December 14, 2017
1. Objectives
2. Market trends
3. Pesticide regulation
   a) Sahel
   b) Coastal countries
4. Lessons learned
1. Objectives

a) Compare implementation of regional pesticide policies
   - in the Sahel (CILSS-CSP)
   - in coastal ECOWAS countries (WACPR-Humid Zone)

b) Identify reasons for uneven implementation of regional pesticide regulations

c) Lessons learned
   - for accelerating regional pesticide implementation in coastal countries
   - for USAID’s regional work
Methods

- 7 country studies
  - Market review
  - Regulatory review

Table 1. Countries Selected for Regional Pesticide Case Study*

<table>
<thead>
<tr>
<th>Market size</th>
<th>CILSS CSP Countries</th>
<th>Coastal ECOWAS Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td></td>
<td>Cote d’Ivoire*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ghana*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nigeria**</td>
</tr>
<tr>
<td>Medium</td>
<td>Burkina Faso</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mali*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senegal*</td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>Cape Verde, Chad, Gambia*, Guinea Bissau, Mauritania, Niger</td>
<td>Benin, Liberia, Sierra Leone, Togo</td>
</tr>
</tbody>
</table>

*Full case study countries; **Rapid appraisal only.
2. Pesticide market trends

- Total pesticide imports: $885 million
- Herbicides dominate

Table 2. Pesticide imports into West Africa, 2015*

<table>
<thead>
<tr>
<th>Pesticide products</th>
<th>Imports</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicides</td>
<td>552</td>
<td>62%</td>
</tr>
<tr>
<td>Insecticides</td>
<td>229</td>
<td>26%</td>
</tr>
<tr>
<td>Others**</td>
<td>104</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>885</td>
<td>100%</td>
</tr>
</tbody>
</table>

* average, 2014 to 2016

** fungicides, growth regulators, rodenticides, nematicides

a) Rapid market growth

Figure 1. Pesticide import trends in West Africa

Source: COMTRADE (2017)
Figure 2. Trends in herbicide use in China and Ethiopia

Source: Huang et al. (2017), Tamru et al. (2017)
b) Drivers of market growth

• Global drivers
  o Expiring international patents
  o Rise of generic pesticides
  o Emerging low-cost Asian suppliers
  o Falling global prices
  o House brands
b) Drivers of market growth

- **Global drivers**
  - Expiring international patents
  - Rise of generic pesticides
  - Emerging low-cost Asian suppliers
  - Falling global prices
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Number of global patents issued for new pesticide active ingredients (AI)

<table>
<thead>
<tr>
<th>Patents per year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990s</td>
<td>13</td>
</tr>
<tr>
<td>2000s</td>
<td>10</td>
</tr>
<tr>
<td>2010s</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Dominguez (2015)
b) Drivers of market growth

- **Global drivers**
  - Expiring international patents
  - **Rise of generic pesticides**
  - Emerging low-cost Asian suppliers
  - Falling global prices
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### Market share of off-patent pesticides

<table>
<thead>
<tr>
<th>Year</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>78%</td>
</tr>
<tr>
<td>2020</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: Dominguez (2015)
b) Drivers of market growth

• Global drivers
  o Expiring international patents
  o Rise of generic pesticides
  o Emerging low-cost Asian suppliers
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Chinese herbicide exports:
1990  0
2015  $2 billion
b) Drivers of market growth

- Global drivers
  - Expiring international patents
  - Rise of generic pesticides
  - Emerging low-cost Asian suppliers
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Falling glyphosate prices, 1990 to 2015
- USA: -50%
- China: -70%
- Mali: -50% (from 2000)
b) Drivers of market growth

- **Global drivers**
  - Expiring international patents
  - Rise of generic pesticides
  - Emerging low-cost Asian suppliers
  - Falling global prices
  - House brands
b) Drivers of market growth

• Domestic drivers
  o Urbanization
  o Rural-to-urban labor migration
  o Rising farm labor costs
  o Intensification pressures
b) Drivers of market growth

- **Domestic drivers**
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In 2015, herbicides cost half as much as hired weeding labor in southern Mali.
b) Drivers of market growth

- **Domestic drivers**
  - Urbanization
  - Rural-to-urban labor migration
  - Rising farm labor costs:
  - Intensification pressures

![Herbicide adoption, Mali (% of plots)](image-url)

c) Consequences of rapid market growth

- New traders
- Proliferating pesticide brands
- Counterfeit and unregistered pesticides
- Monitoring capacity can’t keep pace
- Quality problems unmonitored
- Environmental and health impacts poorly monitored
c) Consequences of rapid market growth

- **New traders**
- Proliferating pesticide brands
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- Monitoring capacity can’t keep pace
- Quality problems unmonitored
- Environmental and health impacts poorly monitored

| 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).
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INITIAL FINDINGS, 100 GLYPHOSATE SAMPLES
- 24% below 75% of stated concentration
- 12% over 125% of stated concentration
c) Consequences of rapid market growth

- New traders
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- Counterfeit and unregistered pesticides
- Monitoring capacity can’t keep pace
- Quality problems unmonitored
- **Environmental and health impacts poorly monitored**
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1. Sahelian countries, 1992
2. Coastal countries, 2008
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1. Sahelian countries, 1992 onwards
   • Pest invasions 1970’s and 1980’s
   • Regional control efforts through CILSS
   • CILSS issues regional pesticide regulations 1992
   • CSP operates from March 1994
   • Countries cooperate; see benefits of pooling scarce technical resources
   • Legal “domestication” requires two rounds and over a decade
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3. Regional pesticide policy implementation

1. Sahelian countries, 1992 onwards

   Round 1. Regional regulations implemented but not legally “domesticated” by member countries
   - CILSS regulations 1992
   - CSP established 1994, operates continuously
   - Countries participate and accept CSP decisions
   - Countries issue non-conforming regulations and legislation

   Round 2. Legal “domestication” by countries
   - Legal review of nonconforming legislation and regulations
   - CILSS issues new regional regulations, 1999
   - 8 countries issue conformation national laws
   - By 2005 all but Guinea Bissau embed CILSS regulations into national law
   - CSP continues to operate continuously to register pesticides regionally
### 1. Sahelian model

<table>
<thead>
<tr>
<th>Regulatory phases</th>
<th>Tasks</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-registration</td>
<td>New product testing</td>
<td>National regulators</td>
</tr>
<tr>
<td>Registration</td>
<td>Review applications</td>
<td>Regional collective decision (CSP)</td>
</tr>
<tr>
<td></td>
<td>Decide on approvals</td>
<td></td>
</tr>
<tr>
<td>Post registration</td>
<td>Register traders</td>
<td>National regulators</td>
</tr>
<tr>
<td></td>
<td>Market monitoring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health impact</td>
<td></td>
</tr>
</tbody>
</table>
3. Regional pesticide policy implementation

2. Coastal countries, 2008 onwards
3. Regional pesticide policy implementation

2. Coastal countries, 2008 onwards

- West African Committee for Pesticide Registration (WACPR)
- Sub-committee Sahelian zone (current Comité Sahélien des Pesticides)
- Sub-committee humid zone
3. Regional pesticide policy implementation

2. Coastal countries, 2008 onwards

Round 1. Minimal implementation (2008-2012)
- ECOWAS regional pesticide regulations, 2008
- CSP continues to function as WACPR-Sahelian Zone
- No overall WACPR secretariat established
- No WACPR-Humid Zone established
- Coastal countries move slowly in absence of a regional regulator

Round 2. ECOWAS enlists CSP to jump-start implementation in coastal countries (2013-present)
- CSP begins technical consultations with coastal countries
- UEMOA supports NPMC launch in coastal member countries
- CSP continues to function as WACPR-Sahelian Zone
- No WACPR-Humid Zone yet established
- Tri-partite agreement ECOWAS, CILSS, UEMOA: September 2017
- CSP to serve at transitional Coordinating Unit for WACPR
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West Africa Committee for Pesticide Registration (WACPR)

West African Committee for Pesticide Registration (WACPR):
Tri-partite supervision by ECOWAS, CILSS and UEMOA
*Coordinating unit (transitional):* Bamako

Sub-committee Sahelian zone
*Technical secretariat:* Bamako
*Member states:* Burkina Faso, Cape Verde, Chad, Gambia, Guinea Bissau, Mali, Mauritania, Niger, Senegal

Sub-committee humid zone,
*Technical secretariat:* Accra
*Member states:* Benin, Côte d'Ivoire, Ghana, Guinea, Liberia, Nigeria, Sierra Leone, Togo
Why did CSP launch quickly in the 1990s?

- Early introduction of CILSS regulations (1992)
- Limited national legislation; new laws modeled on CILSS template
- Small, slow-growing pesticide markets during transition phase
- Decades of prior collaboration fighting drought and regional pest invasions
- Strong commitment to working together to control pests
- Small countries, scarce resources → willingness to share
Obstacles to WACPR implementation in the coastal countries

- Late start, during a period of rapid pesticide market growth
- No sub-regional regulator (WACPR-Humid Zone) in place
- Well-established national regulators already exist
- Conflicting national registration decisions
- Differing institutional structures and legislation for national regulators
- National regulators risk losing financial resources to the new sub-regional regulator
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Table 3. Number of pesticides registered by national regulators in the coastal countries, 2015

<table>
<thead>
<tr>
<th></th>
<th>Herbicides</th>
<th>Insecticides</th>
<th>Other</th>
<th>Total pesticides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d'Ivoire</td>
<td>432</td>
<td>607</td>
<td>271</td>
<td>1,310</td>
</tr>
<tr>
<td>Ghana</td>
<td>212</td>
<td>205</td>
<td>91</td>
<td>508</td>
</tr>
<tr>
<td>Guinea</td>
<td>94</td>
<td>54</td>
<td>14</td>
<td>162</td>
</tr>
</tbody>
</table>
Obstacles to WACPR implementation in the coastal countries

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<table>
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<th>Table 4. Differing ministerial homes for pesticide regulators in the case study countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
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<tr>
<td>Gambia</td>
</tr>
<tr>
<td>Ghana</td>
</tr>
<tr>
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<td>Mali</td>
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### Table 4. Differing ministerial homes for pesticide regulators in the case study countries

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<tr>
<th></th>
<th>Ministry of Agriculture</th>
<th>Ministry of Health</th>
<th>Ministry of Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d'Ivoire</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambia</td>
<td></td>
<td>✓</td>
<td></td>
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<td>✓</td>
</tr>
</tbody>
</table>
Advantages favoring WACPR implementation in the coastal countries

- HIP project (1993-99) → common registration and testing requirements in 5 coastal countries (Benin, Cote d’Ivoire, Ghana, Guinea, Togo)
- UEMOA willing to finance NPMCs
- CILSS expansion to 4 coastal countries (Cote d’Ivoire, Guinea, Benin, Togo) → experience observing CSP in action
4. Lessons for the coastal countries

1. Mobilize new financial resources for national and regional regulators: need high-level review
2. Technical harmonization
3. Legal harmonization
4. Launch sub-regional technical secretariat for the coastal countries
4. Lessons for USAID

1. Regional pesticide policies
   a. **Short run: CSP needs help urgently**
      (i) high-level financial review of regional and national regulators;
      (ii) transition financing
   b. **Medium run: post-registration monitoring support**
      (counterfeits, product quality, environmental impact, human health)
   c. **CSP, not CORAF**, has expertise and mandate from ECOWAS

2. Regional fertilizer and seed policies
   a. **Differences with pesticides:**
      (i) slow market growth;
      (ii) national not regional regulators
   b. **Similarities:**
      (i) post-registration monitoring difficulties
      (counterfeiting, few accredited labs, low national enforcement capacity)
Thanks to:

a) **National focal points**: Ousmane Diakité, Eric Bentsil Quaye, Sonko Landing, Josué Raphaël Adegbidi, Akamou Fataye, Abdoulaye Ndiaye et Sène Waly Binetou Fall, national focal points for their help in organizing and executing field work for the country case and to

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c) **USAID/West Africa**: for their financial support, provided under the FSP Innovation Lab contract AID-OAA-L-13-00001, which made this work possible.
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