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Pesticides Registration in Ghana

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Presentation Outline

- Background information on Ghana
- Environmental Protection Agency of Ghana (EPA-Ghana)
- Legal framework for the registration of pesticides in Ghana
- Data requirements and risk assessments
- Acceptability criteria
- Major challenge - MRLs for export crops
- Addressing the challenge (USDA-FAS Initiative)

Ghana and Neighbouring Countries

Country Profile (1/4) - Political

- Ghana, former British colony - the Gold Coast – was the first sub-Saharan country to gain independence on 6th March 1957
- Land Area: 238,540 Km^2
- Population: 25.2million 2012
- Capital City: Accra

Country Profile (2/4) - Political

- Administrative Divisions: 10 Regions – Greater Accra, Eastern, Central, Western, Volta Ashanti, Bono Ahafo, Northern, Upper West and Upper East Regions
- Current Constitution: Approved on 28th April, 1992 which ushered in the 4th Republic
- Peaceful, and relative political stability has made Ghana a favorable destination for investment in the sub region

Country Profile (3/4) - Economy

- Ghana is well endowed with natural resources
- Agriculture accounts for roughly 25% of GDP and employs more than half (56%) of the workforce, mainly small landholders
- The services sector accounts for 50% of GDP.
- Gold and cocoa production and individual remittances are major sources of foreign exchange
- Oil production in the offshore Jubilee field began in 2011
- GDP $74.77 billion; GDP per capita: $3,100

Country Profile (4/4) - Economy

- Major Industries: Mining (Gold, bauxite, Manganese), Lumber, Manufacturing, Aluminum smelting, Food processing, informal small scale manufacturing, local arts and crafts.
- Major agricultural exports: Cocoa, pineapple, papaya, mango
- Other exports: Gold, Oil, Tuna, Manganese, Bauxite

Some Agricultural Exports





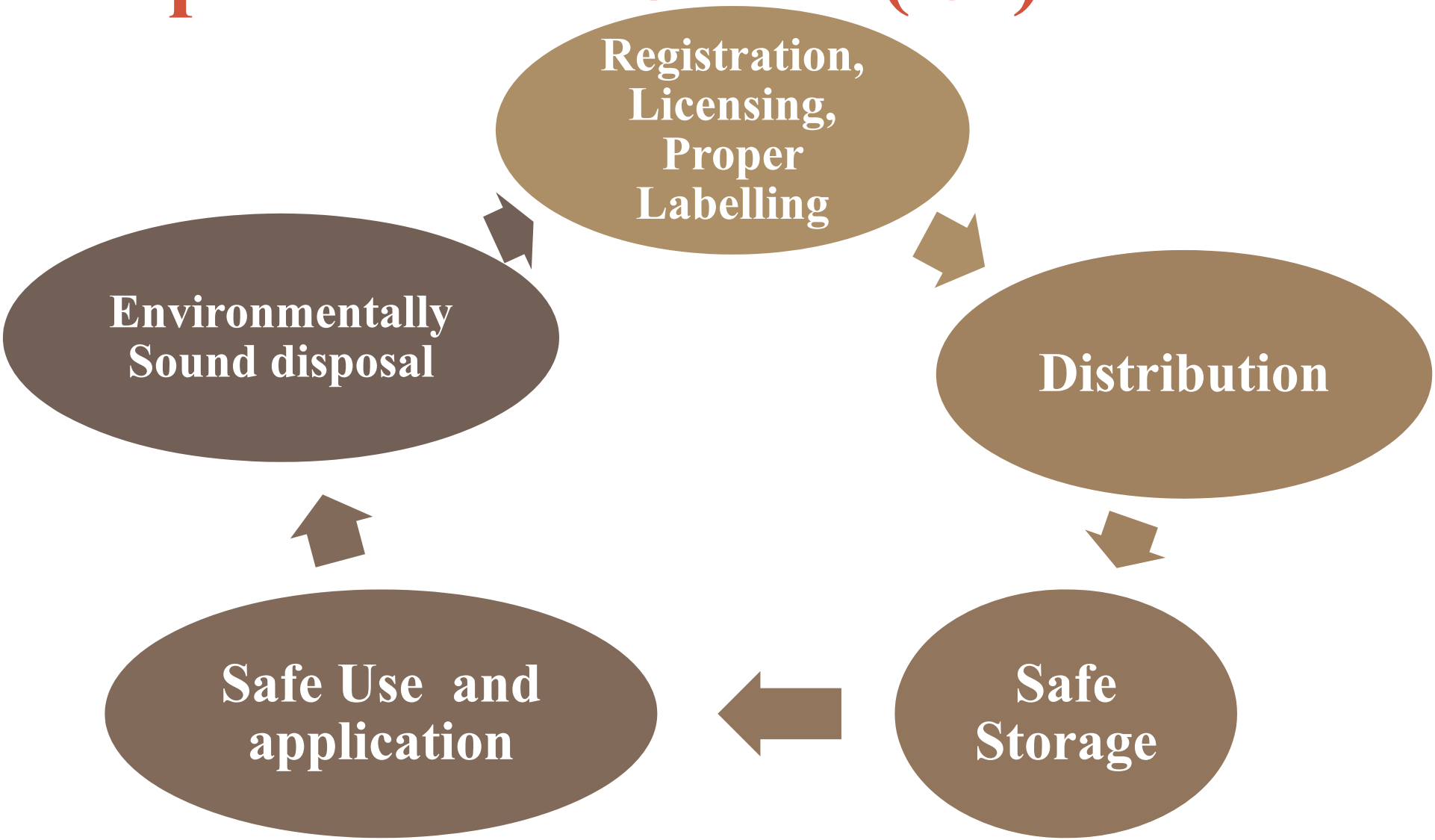

Environmental Protection Agency of Ghana (EPA-Ghana)

- Established as Environmental Protection Council in 1974 to advise Government on environmental issues
- Transformed into Environmental Protection Agency (EPA) with regulatory powers in 1994 through the EPA Act, 1994 (Act 490)
- Head office in Accra and offices in all ten regional capitals of Ghana
- Staff strength of 350 nationwide

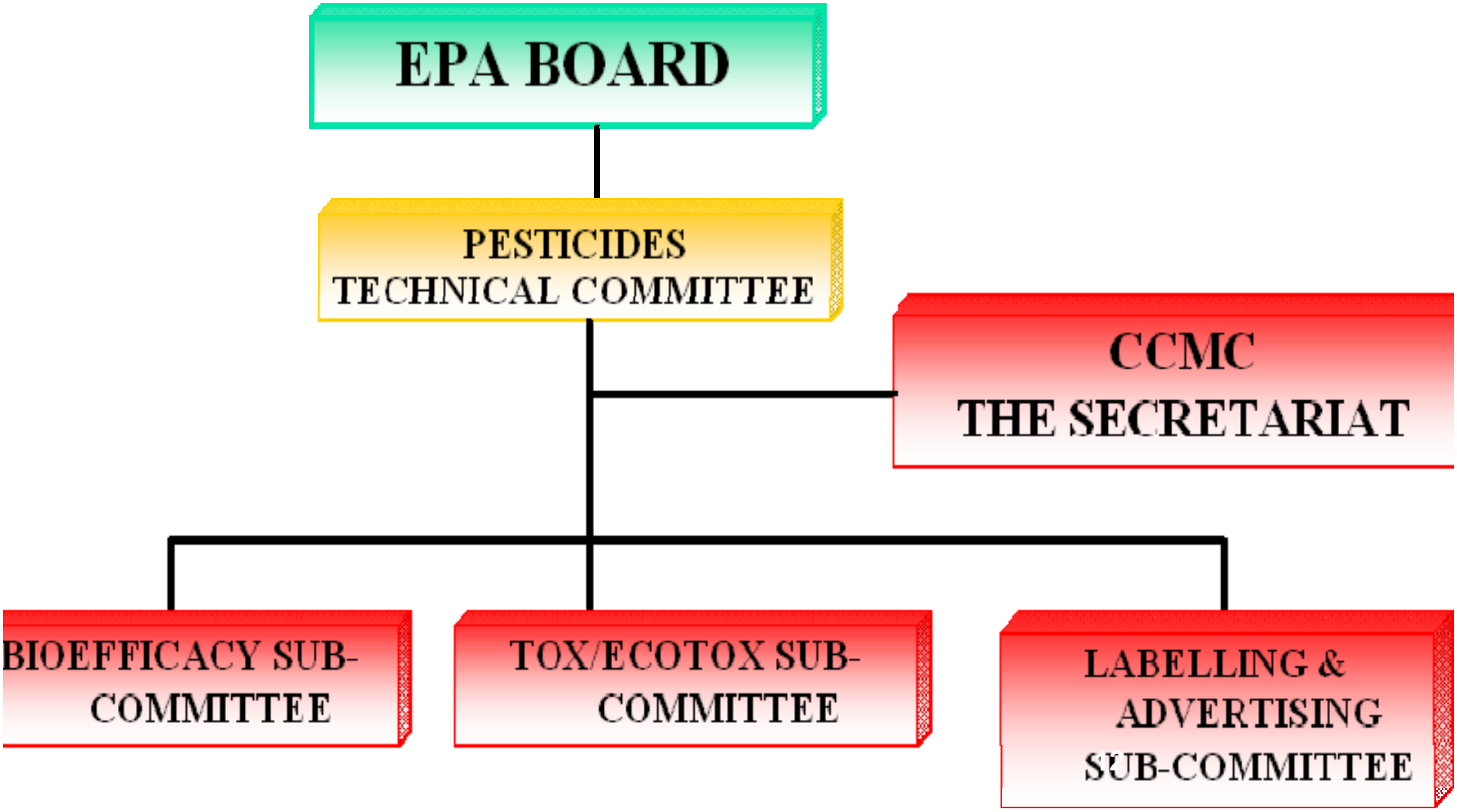
Legal framework, registration of pesticides in Ghana (1/2)

- Part Two of the EPA Act, 1994 (Act 490) is the legal framework for control & management of pesticides in Ghana
- Requires that pesticides must be registered before they can be imported, manufactured, distributed, advertised, sold or used in Ghana
- Requirements for registration of pesticides include submission of application form and dossier containing reports of various studies

Legal framework, registration of pesticides in Ghana (2/2)



Structure for the Registration of Pesticides in Ghana



Composition of the Pesticides Technical Committee (PTC) – 1/2

1. Chairman appointed by the EPA Board and representatives of:
2. Chemistry Department, National Nuclear Research Institute, Ghana Atomic Energy Commission (GAEC)
3. Cocoa Services Division of COCOBOD
4. Plant Protection and Regulatory Services Directorate of MoFA
5. Veterinary Services Directorate of MoFA
6. Ministry of Health

Composition of the Pesticides Technical Committee (PTC) – 2/2

7. Ghana Standards Authority
8. Customs Division of Ghana Revenue Authority
9. Association of Ghana Industries
10. Ghana National Association of Farmers and Fishermen;
11. Ministry responsible for Land and Forestry
12. Ministry responsible for the Environment
13. Environmental Protection Agency.

Data Requirements (1/2)

The data requirements for registration of pesticides in Ghana is based on international standards, principally the OECD guidelines and include:

- ✧ **Background information on the applicant, the active ingredient and formulation**
- ✧ **Product Identity-Common name, chemical name (IUPAC), CIPAC no, CAS no., molecular formula**
- ✧ **Physical-chemical properties of active substance**
- ✧ **Physical-chemical properties of the formulated product**

Data Requirements (2/2)

- ✧Product use pattern- Crop/situation, pests or groups of pests controlled, application method
- ✧Characteristics of active substance in relation to International Conventions (Stockholm, etc.)
- ✧ Human toxicology
- ✧Residue Data – Crops and Maximum residue levels set in other countries
- ✧Eco-toxicological data
- ✧Label

Risk Assessments

- The extracted information / data is evaluated to determine the risks to humans and the environment, associated with the handling and use of the pesticide product
- Human toxicity assessment is undertaken whenever the use pattern of a formulated product is such that humans are directly or indirectly exposed
- Eco-toxicological risk assessments are conducted by calculating Risk Quotients and comparing with trigger values of US and EU

Acceptability criteria (1/4) - Acute toxicity

- **If the product falls in the WHO hazard class of Ia (*extremely hazardous*), it will not be registered**

- **If it falls in the WHO hazard class of Ib (*highly hazardous*), it may only be registered under severely restricted category and for only solid formulations (Granular, tablet or capsulated)**

Acceptability criteria (2/4) - Pesticides for export crops

- A product that is to be used on a crop that is (mainly) destined for export will not be registered for that specific crop if the maximum residue limits (MRLs) are set to the Limit of Detection in the (main) importing countries

Acceptability criteria (3/4) – Evaluation of biological efficacy

- **EPA-Ghana evaluates efficacy reports of pesticide products submitted for registration in order to assess the overall effect of its application on the agricultural system in which it is to be used**

Acceptability criteria (4/4) - Label

<table>
<tr><td rowspan="2">Safety Phrase & Risk Phrase</td><td>Name of product</td><td rowspan="2">Direction for use</td></tr>
<tr><td>Active ingredient and Concentration</td></tr>
<tr><td>Warning</td><td>Summary of the possible uses</td></tr>
<tr><td>First aid measures
Medical instructions</td><td>EPA registration number
Batch number
Date of manufacture
Expiry Date</td><td>Cultural practices</td></tr>
<tr><td rowspan="2">Antidote</td><td>Name and address of the manufacturer</td><td rowspan="2">Pre-harvest interval
Re-entry period</td></tr>
<tr><td>Name and Address of Local Agent</td></tr>
<tr><td colspan="3">Hazard symbol / hazard indication / colour code / Pictograms</td></tr>
</table>

Approval categories (1/3)

1. **Full registration (Valid for three years)**
   - For General use or for Restricted use

2. **Provisional clearance (valid for a maximum of 1 year)**

3. **Suspended / Banned**

Approval categories (2/3) Classification

- **General use:** If when applied for the use for which it is registered will not have unreasonable adverse effects on human health and the environment.
- **Restricted use:** If its use in accordance with widespread commonly recognised practice in the absence of additional regulatory restrictions may cause unreasonable adverse effect on people, animals, crops or on the environment.
- **Banned or suspended:** If the pesticide will have unreasonable adverse effects on human health and the environment in normal use, or in accordance with International Conventions (Rotterdam & Stockholm Conventions, Montreal Protocol)

Approval categories (3/3) Provisional Clearance

- Most information required for registration of pesticide has been provided to the Agency;
- The pesticide does not present a toxicological risk to people, animals, crops or the environment;
- The agency may clear the pesticide for use without the registration, and this clearance shall be known as provisional clearance;
- Shall be temporary pending the registration by the Agency of the pesticide

Register of Pesticides - 30th Dec. 2015

Category	FRE	PCL	Banned	Totals
Insecticides	171	34	32	**237**
Fungicides	53	11	0	**64**
Herbicides	143	69	0	**212**
Plant Growth Regulators	6	1	0	**7**
Molluscicides	1	0	0	**1**
Rodenticides	2	0	0	**2**
Nematicides	4	1	0	**5**
Adjuvants	4	0	0	**4**
Biocides	7	1	0	**8**
Totals	**391**	**117**	**32**	**540**

Monitoring residues of pesticides in food & environment (1/2)

- Ghana Standards Authority (GSA) checks residues of organochlorines, synthetic pyrethroids, organophosphates, in fruits, fish, vegetables, cereals, water and soils
- Pesticides frequently detected in mango for instance are chlorpyrifos, fenvalerate and bifenthrin and levels sometimes exceed codex and EU MRLs

Monitoring residues of pesticides in food & environment (2/2)

- Pesticides frequently detected in other fruits and vegetables are chlorpyrifos, dimethoate, pirimiphos-methyl, permethrin, deltamethrin, bifenthrin and fenvalerate

- In fruits & vegetables, chlorpyrifos, dimethoate and fenvalerate residues do exceed the MRLs

MRLs for export crops (1/3)

- Many of the pesticides required for the production of a diverse variety of tropical fruits and vegetables do not have established national or Codex Alimentarius MRLs
- Consequently, importing countries set residue tolerances at “limits of determination”, e.g. the lowest concentration of residue in a sample that can be detected by a given analytical procedure

MRLs for export crops (2/3)

- Ghana and most African countries do not have the capacity to generate quality data to establish international trade standards
- Due to this drawback, farmers are forced to continue to use more toxic chemicals resulting in economic loss because of restricted market access, lower crop productivity (increased rate of pest resistance), and negative impacts on environment, worker and consumer safety

MRLs for export crops (3/3)

The problems created by lack of MRLs include

- ✧ **Hindered access to export markets due to a lack of acceptable pest control products**
- ✧ **A lack of corresponding MRL trade standards for crops of importance to Ghana and other African countries, which results in non-compliance with international MRL standards**

Addressing the MRL Challenge (1/2)

- To address this challenge the USDA-FAS is embarking on a project "Pesticide residue data generation for Ghana and other participating African Countries"
- The ultimate aim is to establish a sustainable program to provide minor crop growers around the world with safe pest control tools, and to ensure that their high-value commodities comply with international residue standards for trade

Addressing the MRL Challenge (2/2)

- **Goal: Enable Ghana and other participating countries to proactively seek and develop pest control tools that are targeted to their needs and conditions, and to allow the countries to actively participate in the international standard setting process**
- **Objective: To enhance capacity of Ghana and other participating countries meet pesticide-related export requirements based on international (Codex) standards to open and enhance market access for horticultural products**

Participating Countries

- Participating countries: Ghana, Kenya, Senegal, Tanzania, and Uganda to receive training and conduct actual supervised field trials
- Observer countries: Benin, Cameroon, Mali, and Zambia to receive training in field trials and will observe the actual trials
- In Ghana the focus is to establish MRLs for sulfoxaflor in Mango to control whiteflies & scales

Expected Outputs (1/5)

Output 1 - Capacity Building

- ✧Technical capacity building through the training of technical personnel (laboratory, field trial experts, others)
- ✧Training to focus conduct of high quality residue research and studies that would be accepted by international standard setting bodies, such as Codex, or by other national governments for the establishment of MRLs
- ✧Strengthen National pesticide monitoring systems

Expected Outputs (2/5)

Output 1 - Capacity Building continued

- ✧Strengthen standard operating procedures, quality assurance systems, and method development of analytical laboratories to perform high-quality and reliable residue testing
- ✧Develop national programs to identify pest control needs, prioritize needs, and carry out residue field trials to support registrations and Codex MRLs

Expected Outputs (3/5)

Expected Output 2 - Field Trials

- ✧Residue studies will be completed that could support new Codex MRLs for the selected commodities selected
- ✧This number of MRLs can significantly increase since representative commodities will be selected for the study that would cover additional commodities under the sub-group
- ✧Depending on the crop, a minimum of 4-6 trials spanning 1-2 growing seasons may be required

Expected Outputs (4/5)

Output 2 - Field Trials continued

- For each pesticide/crop tested in the country, that pesticide would also be registered for use on that crop
- Whenever possible, registrations will be sought in multiple countries simultaneously based on common data generated under this project
- Number of registered crop uses could expand if multiple crops can be covered under a single label, based on the discretion of the national registration authority
- A crop/pesticide priority list for Ghana will be developed for future Codex MRL work

Expected Outputs (5/5)

Output 3: JMPR Data Submissions

- ✧Data generated under this initiative will be submitted to the JMPR for Codex MRL establishment
- ✧If applicable, the data can also be used to establish import tolerance in key export countries and regions

Beneficiaries (1/2)

- Farmers
- Agri-food export companies
- Domestic consumers
- National pesticide regulatory authorities
- Industry associations

Beneficiaries (2/2)

- Increased availability of Integrated Pest Management (IPM) tools for farmers to better protect crops and mitigate pest resistance
- Increased worker, environmental, and consumer safety by utilizing newer pesticides that are much less toxic
- Increased domestic food security through increased crop production and variety
- Increased economic output by accessing lucrative international markets