



## Mitigating the harmful effects of pesticide residues in cocoa in Africa

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The project aimed to maintain and improve market access for cocoa beans from Africa by strengthening the expertise and capacity of the African countries to implement international Sanitary and Phytosanitary (SPS) standards. This was achieved thanks to capacity building of relevant stakeholders (farmers, cooperatives, middlemen, warehouse managers and other agencies) on Good Agricultural Practices (GAP), Good Warehouse Practices (GWP) and use of pesticides. It also aimed to strengthen national laboratories for analyses and monitoring of pesticide residues including other harmful substances and build up intra and inter country capacity to adequately advice on SPS issues, thus reduce potential disruption to trade from non-compliance.

More information about the Project and related studies on cocoa producing countries can be found on the [website of the ICCO](#), the project implementing agency. A video highlighting the focus of the project can be found [here](#).

A session "[SPS Assistance for Development: the case for French - Speaking Africa](#)" organized jointly by the Permanent Missions of Canada and France, and the STDF looked at lessons learned from this project.

This project was evaluated by an independent expert. Find out more about the findings and recommendations of the project evaluation [here](#).

### **STDF/PG/298**

#### **Status**

Completed

#### **Start Date**

01/01/2011

#### **End Date**

31/12/2013

#### **Project Value (US\$)**

\$5,377,569

#### **STDF Contribution (US\$)**

\$664,675

#### **Beneficiaries**

Cameroon

Côte d'Ivoire

Ghana

Nigeria

Togo

### **Implementing Entities**

International Cocoa Organization (ICCO)

### **Partners**

CropLife Africa and Middle East

EDES/COLEACP, Belgium

Interprofessional Fund for Agricultural Research and Advisory Services (FIRCA), Côte d'Ivoire

Quality Control Company Ltd (QCCL), Ghana

United Nations Industrial Development Organization (UNIDO)

### **Background**

Cocoa is of vital importance to the economies of Cameroon, Côte d'Ivoire, Ghana, Nigeria and Togo contributing to major proportions of their foreign exchange earnings and regionally, providing employment to millions of people. In all but Togo, cocoa constitutes the largest part of the agricultural sector and for Cameroon, Côte d'Ivoire and Ghana, it is the largest sector of the whole economy. It is therefore evident that threats to cocoa marketing would have a significant economic impact and this has led the authorities of all participating countries to prioritize access to consumer markets as being of national importance.

In many cocoa importing countries, consumers are becoming increasingly aware of food safety concerns, with a perception that the use of chemicals and other substances in the production and processing of cocoa might be detrimental to their health. As a result, some countries have enacted legislative and regulatory measures and established SPS standards that have to be met for imported food or food substances. New regulations, in the EU, the USA and Japan have the potential, if not properly adhered-to, of disrupting cocoa trade and consequently depriving smallholder farmers and governments in producing countries, of much needed revenues. For example, in Japan, since new legislation on maximum residue limits (MRLs) came into effect in May 2006, several consignments of cocoa beans have been denied entry into the country. The rejected consignments were found to have exceeded the MRLs set by the Japanese Ministry of Health, Labour and Welfare (MHLW). Considerable concern has been expressed by chocolate manufacturers in the EU and USA regarding reports of lots that exceeded permitted MRLs, including obsolete pesticides.

Such disruption clearly has the potential to harm the welfare of the farmers and affect the countries' poverty alleviation programmes. After a thorough investigation in the SPS situation in the countries concerned, major gaps have been identified in: (i) quantification of the levels of risk from contaminants affecting the cocoa supply chain; (ii) specific information on pesticide science, at all levels, in producer countries and (iii) infrastructure to monitor and enforce SPS standards.

The project addressed these issues by strengthening national capacity in the five participating countries to address SPS standards and by developing regional co-operation, especially by collaborating with existing in-country and international initiatives in this area.

### **Results**

#### ***Regional cooperation and integration***

The project was a catalyst for initiatives focusing on SPS issues in the five participating countries, and has provided an adequate framework for coordinating these initiatives at national and regional levels thus serving as a tool for regional cooperation and integration on common constraints that affect member countries.

#### ***Enhanced SPS awareness among key stakeholders in the cocoa supply chain***

There has been a substantial increase in awareness among all stakeholders on cocoa SPS issues and their impact on cocoa trade resulting from the project activities. Several regional and national workshops were organized to raise awareness and to bring national and international SPS standards in cocoa production and trade to the forefront. A number of publications on the efficacy of pesticides and their applications have been published and disseminated to stakeholders through posters, flyers, trade exhibits, as well as TV and radio programmes. A project website was set up to exchange information and to constantly update all stakeholders on general and specific food safety standard issues, as related to cocoa. The stakeholders in the cocoa value chain that were targeted by the project included policy makers, plant quarantine services, agricultural extension services, cocoa farmers, traders, customs, immigration, pesticide sellers, laboratory technicians and warehouse managers.

#### ***Enhanced capacity of relevant stakeholders to apply GAP and GWP***

In cooperation with EDES/COLEACP, the project developed a methodology for conducting a Self-Assessment Guide (SAG) for

cocoa. This is a set of measures based on risk assessment which have to be implemented to ensure that, at every production stage; harvesting, transport, packaging, processing and distribution, the cocoa produced complies with SPS regulatory requirements as well as with product quality requirements. The cocoa should also meet traceability and monitoring requirements to ensure compliance with specifications. SAG was successfully developed for the cocoa sector in Ghana and is currently being put into use. Efforts have been initiated and preparatory arrangements have advanced to develop SAG for Cameroon, Côte d'Ivoire, Nigeria and Togo.

With assistance provided by the EDES/COLEACP, the project developed 21 training modules on GAP and GWP. In addition, several training modules on pesticide selection and application were developed through cooperation with CropLife Africa. Where necessary, the modules were adapted to local conditions for training purposes. Several training sessions of trainers (ToT) were conducted and, in total, 200 trainers are now available to implement the cascading of training on the application of SPS-related Good Agricultural Practices (GAP) down to the farmers' level. The capacity of the five participating countries has been strengthened to train cocoa farmers and traders on best practices to ensure that cocoa meets international SPS standards.

### ***Enhanced institutional capacity to implement SPS measures in-country***

A study on "Assessing the strengths and weaknesses in pesticide usage" was conducted in Ghana in 2012 under the framework of the EDES programme. It provided an assessment of legislative provisions on SPS issues for adaption to international pesticide residue standards. The broad conclusions of the study were that cocoa is a relatively low-risk crop as related to food safety issues, compared to fruits and vegetables. While legislation may need to be strengthened, the weak link in food safety is often that legislation is not sufficiently enforced; new issues are expected to emerge to which legislation will need to adapt; and National Food Safety control systems will need to be improved for more effectiveness. Similar assessments are to be carried out for Cameroon, Cote d'Ivoire, Nigeria and Togo with the same methodology used for Ghana.

The third edition of the manual on "Pesticide Use in Cocoa: A Guide for Training Administrative and Research Staff" was completed and is to be published by the end of March 2014. This edition will be made available in English and in French to all stakeholders.

CropLife Africa trained a significant number of stakeholders drawn from customs, immigration services, plant quarantine services, agricultural extension services, agronomists, pesticide suppliers and pesticide dealers on pesticide use and phytosanitary rules and regulations. The training focused on problems with pesticide products and anti-counterfeit measures and how to detect fake, obsolete and banned substances.

A list of pesticides approved for use in cocoa production and the institutions responsible for food safety issues was compiled for each of the participating countries. This has reinforced transparency in relation to the responsibilities of the food safety institutions in each country and the necessary steps to follow to address SPS issues on cocoa.

With the assistance of UNIDO, the capacity of the five participating countries to carry out MRLs tests and tests for other harmful substances and contaminants in cocoa was assessed. UNIDO is now assisting 21 laboratories in West Africa to gain accreditation. Through the project, laboratory testing equipment was purchased for Côte d'Ivoire, Ghana and Nigeria. Nigeria and Ghana carried out separate training for their laboratory technicians, to enhance the capacity of these countries to test for MRLs and other harmful substances in cocoa.

## **Recommendations**

### ***General conclusions***

The project confirmed the need to address a number of SPS concerns in the production and trade of cocoa so as to increase access to export markets. Although, time and financial constraints limited the achievements of the project, it has proved to be a catalyst for initiatives focusing on cocoa SPS issues in the five participating countries, and has provided an adequate framework for coordinating them at national and regional levels. The project has succeeded in improving the capacity of the five participating countries to address cocoa SPS related issues. The signs of this improvement is visible on the ground and ranges from the increased awareness and willingness of the stakeholders along the supply chain to produce cocoa that comply with international standards, to efforts being put in place to address the food safety concerns. The impact of the project is expected to be assessed through an evaluation study to be carried out in future to establish the state of pesticide selection and use in Africa. It is hoped that this could be done through updating the survey conducted by CABI in 2006-2008 on pesticide use in West Africa.

The five participating countries have strongly and collectively expressed the willingness to pursue the effort initiated during the project and have decided to continue to collaborate, exchange and share experiences and to meet on regular basis to review

progress. The ICCO is requested to facilitate this process in addition to establishing a Working Group to coordinate activities in the countries.

***Encourage and continue efforts to enhance capacity to comply with SPS standards by investing in infrastructure development and funding of SPS activities***

Legislative and infrastructural framework are necessary to be put in place to ensure that SPS standards are complied with. The cocoa producing countries, the cocoa industry and international development agencies should provide more funding to activities that would enhance the capacity of the stakeholders along the cocoa supply chain to adhere to good practices in line with national and international SPS standards

***Information related to cocoa SPS issues should continuously be disseminated to all stakeholders***

The relevant authorities in the cocoa-producing countries should strengthen their efforts in raising the awareness of farmers and other stakeholders in the supply chain in relation to SPS issues, using the most appropriate information dissemination technology. The ICCO should develop an interactive web-based platform accessible to all stakeholders that will provide relevant information and updates on SPS matters at global level. An information exchange system should be implemented between countries to share data and materials developed for awareness raising and training.

***GAP and GWP should be adapted to local conditions for application***

It was acknowledged that some training kits provided by EDES/COLEACP may not be readily available at local level, and should therefore be adapted to suit local conditions, with the support of EDES/COLEACP, bearing in mind minimum requirements. Pesticides used on cocoa should be classified into four categories as follows, (i) strategic (ii) for use with great care (iii) experimental and (iv) unsuitable for use in cocoa. This classification, adopted in the second edition (2010) of the Guidelines for Pesticide Use in Cocoa, continues to be a helpful basis for classification of the suitability of individual active substances. The third edition of the Guidelines for Pesticide Use in Cocoa includes a new chapter on pesticide application techniques. In most countries, more than 90% of smallholders use manual sprayers fitted with variable cone nozzles. These are impossible to calibrate accurately which therefore has profound implications for the farmers' ability to treat cocoa with an accurate dosage. This issue should be addressed in future training sessions.

***Environmentally friendly approaches to control cocoa pests and diseases should be developed and encouraged***

It was acknowledged that: (i) insecticides remain the most effective way of controlling pests such as cocoa mirids; (ii) research into alternative methods should continue while noting that the most likely role for pheromones would be for monitoring rather than managing pest populations; (ii) the introduction of modern pesticides as a replacement for cheap, generic compounds has increased the cost of individual treatments. The most likely way to mitigate these increased costs is by more efficient application and thus optimization of dosages.

***Strong and effective legislations are required to strengthen compliance with and adherence to SPS standards***

Cocoa-producing countries are advised to adjust legislation to include the expressed prohibition of the import and manufacture of sprayers that do not comply with FAO minimum requirements for the quality of application equipment. There must be a means for evaluating sprayers' compliance with these standards using the FAO Minimum Requirements for Agricultural Pesticide Application Equipment, Volume 1 (2001). Codex Alimentarius MRLs for pesticides in cocoa and the methods for testing are often used as a reference. Stakeholders in the cocoa sector, including governments of cocoa producing and consuming countries, industry associations and ICCO, are invited to co-ordinate in order to establish the need to revise them, enabling more harmonized and standardized residue tolerances worldwide. Cocoa-producing countries are encouraged to strengthen their efforts to create a database of information on tests carried out on chemical compounds used in cocoa pesticides, as well as to participate in the meetings of standard setting committees including the International SPS Committee. ECOWAS and other regional bodies are encouraged to finalize the process of harmonizing pesticide registration. Cocoa-producing countries are invited to strengthen their efforts to enforce existing national laws and regulations on SPS issues for cocoa while taking into account developments at the regional and international levels.

***Effective monitoring and border controls should be put in place to fight against illegal trade in pesticides***

Cocoa-producing countries need to establish a strategic surveillance system to ensure the food safety of local consumers and to respond adequately to their needs. Cocoa-producing countries are advised to strengthen law enforcement at the border to fight against counterfeit chemical pesticide products and to develop strategies and methodologies to manage seized products. There is a need to improve the management of recycling of chemical pesticide containers. The efforts underway to accredit more laboratories in the region should continue, to ensure that capacity in this area is enhanced. Collaboration between

laboratories for testing residue levels and other contaminants in cocoa-producing countries in the region should be reinforced. Collaboration between national structures on law enforcement (customs, laboratories and regulation institutions) should be reinforced.