

## STDF PROJECT GRANT APPLICATION FORM

The Standards and Trade Development Facility (STDF) offers grants for projects that promote compliance with international SPS requirements. Eligible organizations can apply for STDF project funding using this form. Applicants can request up to a maximum of US\$1,000,000 for projects that have a duration of three years or less.

The STDF Working Group makes decisions on requests for STDF funding. The following types of projects are given favourable consideration:

- Projects relevant to the identification, development and dissemination of good practice in SPS-related technical cooperation, including projects that develop and apply innovative and replicable approaches;
- Projects linked to STDF work on cross-cutting topics of common interest;
- Projects that address SPS constraints through regional approaches; and
- Collaborative and inter-disciplinary projects focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more partners or other relevant organizations.

Complete details on eligibility criteria and other requirements are available in the *Guidance Note for Applicants* on the STDF website ([www.standardsfacility.org](http://www.standardsfacility.org)). Please read the *Guidance Note* before completing this form. Completed applications should be sent by email (as Word documents) to [STDFSecretariat@wto.org](mailto:STDFSecretariat@wto.org).

<b>Project Title</b>	Strengthening risk-based food control in Sub-Saharan Africa: implementation of a regional Total Diet Study as a tool to assess food chemical contamination
<b>Objective</b>	Improved understanding on food contamination levels origin in Benin, Cameroon, Mali and Nigeria
<b>Budget requested from STDF</b>	<b>1,063,708.40 US\$</b>
<b>In-kind contribution of applicant's</b>	<b>142,500 US\$</b>
<b>Total project budget</b>	<b>1,206,208.40 US\$</b>
<b>Full name and contact details of the requesting organization(s)</b>	<p><b><u>Benin:</u></b> National Food Safety Authority (ABSSA); contact Mr Yessoufou Alamon, Tel.: +22966244924</p> <p><b><u>Cameroon:</u></b> Centre Pasteur Cameroon; contact: Dr Gimou Marie Madeleine, Tel : +237 99 61 90 31</p> <p><b><u>Mali:</u></b> National Agency for Food Safety (ANSSA); contact: Pr Akory Ag Iknane, Tel: +223 66 76 00 75</p> <p><b><u>Nigeria:</u></b> National Agency for Food and Drug Administration and Control (NAFDAC); contact: Ms Jane Omojokun, Tel: +234 8033 338 184;</p>
<b>Full name and contact details of contact person for follow-up</b>	<p><b><u>Regional coordinator:</u></b> Dr Gimou Marie Madeleine, Centre Pasteur of Cameroon (CPC), tel: +237996190 31 Email: <a href="mailto:gimou@pasteur-yaounde.org">gimou@pasteur-yaounde.org</a></p> <p><b><u>Implementing agency:</u></b> Food and Agriculture Organisation of the United Nations, (FAO), contacts: Dr. Jean Kamanzi, tel:+263772513503, email: <a href="mailto:jean.kamanzi@fao.org">jean.kamanzi@fao.org</a> and Dr. Caroline Merten Tel: +393469763858, email: <a href="mailto:caroline.merten@fao.org">caroline.merten@fao.org</a></p>

## **I. BACKGROUND & RATIONALE**

### **1. Relevance for the STDF**

Why is this project relevant for STDF funding? Explain how the project is related to one or more of the following: (i) the identification, development and dissemination of good practice in SPS-related technical cooperation, including the development and application of innovative and replicable approaches; (ii) STDF work on cross-cutting topics of common interest; (iii) the use of regional approaches to address SPS constraints; and/or (iv) collaborative and inter-disciplinary approaches focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more STDF partners or other relevant organizations. See Qn. 9 and Qn. 15 (a) of the Guidance Note.

#### **(i) The identification, development and dissemination of good practice in SPS-related technical cooperation, including the development and application of innovative and replicable approaches:**

The World Trade Organization (WTO) framework for international trade, under its Agreement on the Application of Sanitary and Phytosanitary Measures, now requires that risk management decisions in the field of food safety and health should be based on sound scientific risk assessments. SPS capacity needs are enormous in sub-Saharan Africa including the lack of a scientific base for the development and implementation of SPS standards and risk analysis. The present project aims at providing scientific data needed for risk managers to address a major SPS issue, chemical food safety, in Mali, Benin, Nigeria and Cameroon. In absence of risk assessment, countries in sub-Saharan Africa are vulnerable in terms of sale of their food products on the regional and global market and also in terms of health for their populations increasingly involved in sub-regional transactions.

The current project contributes to each of the three components of the risk analysis as recommended by Codex:

- risk assessment through a total diet study providing accurate chemical contamination data and exposure estimates,
- risk management through monitoring at pilot scale how exposure estimates will be used to prioritise and implement control measures to reduce exposure to chemical contaminants through food,
- risk communication through consultation workshops with all involved stakeholders in the sub region to inform them on the chemical contamination through diet and necessary related control measures

Good practices regarding the risk analysis will be subsequently adjusted to the context of each country involved in this project (Benin, Cameroun, Mali, Nigeria) and will subsequently enable a more precise and pertinent application of risk-based good practices throughout the African Region.

**(ii) STDF work on cross-cutting topics of common interest;**

This project is relevant to STDF work, as it may contribute to poverty reduction through improved market access and decreased burden and cost of foodborne diseases. Both can potentially lead to increased development. Moreover, the improved contribution of African countries in Codex standards setting and implementation enhances the accuracy of the scientific data used as the basis to develop these standards by being more representative of sub-Saharan food safety situation. All four participating countries are WTO members.

**(iii) the use of regional approaches to address SPS constraints;**

This project uses a regional approach and foresees the opportunity to be implemented by four different African Countries: Benin, Cameroon, Mali and Nigeria. Its outcome will provide a regional diagnostic about the situation in these countries regarding chemical safety and should have a positive effect on agriculture and husbandry practices, trade, and food safety policies at national, regional and international levels.

Knowledge sharing and dissemination of the outcomes of this project to other African sub regions, beside the sub-Saharan, will enable them to take advantage of the lessons learnt and to implement similar activities.

**(iv) . collaborative and inter-disciplinary approaches focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more STDF partners or other relevant organizations.**

The nature of the project necessarily establishes a link between trade, health (human, animal and plant) and agriculture. Food safety is most often a matter of inter disciplinary collaboration between public health and veterinary public health ministries. Tackling chemical safety requires all agencies from ministry of agriculture, health , standard and trade involved in food safety control to collaborate at national and international level.

This is embodied at national level by the commitment and involvement of various ministries in each country at various stages of the project and at the international level by the partnership between WTO, FAO and WHO. FAO and WHO will provide joint scientific advice to this project and FAO will be the implementing organisation.

Altogether, this project can contribute to reaching Millennium Development Goals N°1, 4, 5, 7 and 8.

**2. SPS context and specific issue/problem to be addressed**

Provide an overview of the SPS situation in the country/region including details on: (i) food and agricultural trade flows and relevant SPS issues; (ii) the institutional framework for SPS management; and (iii) any SPS priorities or issues identified in SPS-related capacity evaluations, the Enhanced Integrated Framework's (EIF) Diagnostic Trade Integration Study (DTIS) for least developed countries, or other relevant documents. See Qn. 15 (b) of the Guidance Note.

**(i) food and agricultural trade flows and relevant SPS issues;**

Little is known about the chemical contamination of food in sub-Saharan Africa. In these countries, except for few exported products, foods are not regularly monitored for toxic chemicals, and no country has an operational monitoring program for chemicals in food.

Chemical hazards associated with food both constitute a public health problem and an obstacle to market access in most African countries including Nigeria, Benin, Cameroun and Mali. A significant part of the population may suffer from chronic complications or die as a result of eating contaminated food, resulting in decreased labour and productivity and higher costs for National health system and thus impacting national budget and investment capacity. Dietary exposure to chemical contaminants impacts growth and development negatively.

In addition, the contribution of Sub Saharan African countries in international trade often encountered many difficulties mainly due to (i) lack of risk based approach for food safety issues, (ii) inadequacy and inefficiency of the competent authority in terms of human capacities and law enforcement, (iii) lack of alert and surveillance systems, (iv) little or no application of good practices such as Good Manufacturing Practices and Good Agricultural Practices (v) weak technical and analytical capacities of laboratories (vi) insufficient contribution to the development of international standards. These difficulties contribute to an inefficient coordination of food control actions and constitute a barrier to market access.

The lack of preparedness of African countries make them vulnerable to shortcomings in food safety (Rapid Alert System for Food and Feed (RASFF), 2008<sup>1</sup>) and have caused economic losses as a result of rejected food exports. Many foodstuffs are concerned including cereals, cocoa, coffee or peanut as the most affected. For example, groundnuts coming from sub-Saharan Africa were frequently rejected at the European border due to their contamination with mycotoxins. African cocoa beans intended mainly for export have often inadequate quality due to contamination by various toxigenic mycoflora like the black *Aspergillus* producing Ochratoxin A (Mounjouenpou, 2008)<sup>2</sup>.

The present project will provide an overview of the chemical risks for the main food commodities produced in the countries and will allow to estimate the compliance of the food production with international standards. This global diagnostic should decrease the vulnerability to export rejection for the major exported commodities e.g. coffee, cocoa and ground nuts and improve the market

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<sup>1</sup> [http://www.efet.gr/docs/rasff/report2008\\_en.pdf](http://www.efet.gr/docs/rasff/report2008_en.pdf).

access for other produced food commodities like fresh fruits and vegetables. The participation within the project of countries with different levels of exports (in terms of food commodities and in terms of export market) but with high potential of production will allow exchanges and collaboration on issues concerning trade of foods and to determine a policy direction of food safety concerning agricultural practices.

The selection of food to be analysed will be based on the one hand on the major food available on the national markets identified by their significant coverage of the consumer diet and on the other hand, trade statistics compiled by the International Trade Centre (<http://www.intracen.org/exporters/statistics-import-product-country/>). Within appendix 7, table 1 shows the values for food commodities exported by each of the 4 countries as well as the time trend between 2008 and 2011. From these data it appears that the 4 most important food groups from the export point of view are cocoa, fresh fruits including nuts, coffee and fish and other seafood. Within fruits the sub-category of nuts was individualized because of its importance regarding mycotoxins contamination and related export rejections. Finally the trade between sub Saharan African countries will be also considered (see annexe 7) as it provides a possibility of market access for food which cannot reach a broader market but should achieve similar criteria of safety. For example, animals (cattle, pigs, poultry...) are daily commercialized at both national and sub-regional levels in sub-Saharan Africa. However farmers treat their animals themselves, with unknown chemical products with a risk for human consumption or pathogens resistance (Mal-mal et al., 2009).

(ii) *the institutional framework for SPS management;*

**In Benin**, SPS situations and issues are currently addressed through the Department of Agriculture (DAGRI) who is the National Information Centre and the Department of External Trade (DGCE). *Codex Alimentarius* committee is chaired by the Department of Food and Nutrition (DANA), who is currently strengthening its contribution to international meetings by sponsoring travels of Benin delegates from national budget. However, current reforms of the food safety sector in Benin, including the launch of the Benin Food Safety Authority (ABSSA) in May 2012 (under the ministry of agriculture, livestock and fisheries) has come from the sound need to reorganize this sector. Supporting the implementation of ABSSA's activities requires additional efforts, some of which are underway. This includes the construction of a top-end laboratory able to measure most pesticides, toxins and contaminants. However the key to establishing an efficient food control system in Benin is based on a valid risk analysis. The risk assessment part of the risk analysis currently lacks a lot of

data. Should these data be available, SPS management would certainly be reinforced and become more efficient by enabling the Benin authority to focus on identified priorities and to tackle major SPS issues.

**In Cameroon,** SPS situations and issues are addressed within the National Committee on *Codex Alimentarius* and Food Safety of Cameroon (CNCOSAC), which is an enlarged inter-ministerial committee that includes, public operators of the private sector and the civil society. The CNCOSAC is placed under the statutory authority of the Ministry of Mines Industry and Technological Development, (MINIMIDT) and its Technical Secretariat is piloted by the Agency of Standards and Quality in Cameroon (ANOR). Diagnostic and compliance certificates are issued by the ANOR. The pole of exchange between stakeholders on food safety campaigns in Cameroon is CNCOSAC. Veterinary inspections from the Ministry of Livestock and those of the Ministry of Agriculture, constitutes the main measures to enforce rules and regulations. Discussion are under way to create a national food safety authority.

**In Mali,** SPS situations and issues are currently addressed through the National Agency of Food Safety (ANSSA), under the ministry of health, and the support services include the national services working in the field of animal protection, plant protection, agriculture production, human health and safety, and related laboratories for microorganisms and chemical analyses. ANSSA also works within Codex Alimentarius committee for national standards regulation. Missions: i) Coordinate all activities related to food safety, ii) Provide technical and scientific support for control structures iii) Provide technical and scientific support necessary for the elaboration of the regulations relating to safety food iv) Assess the risks to health may be food v) Support the activities of surveillance and epidemiological networks vi) Ensure risk communication. The food control in Mali is governed by basic laws, Decrees and Orders of general provisions setting practices of application of various laws. However, some texts are obsolete and no longer correspond to national and international context. The practical implementation of control is therefore imperfect. Faced with new challenges of globalization and the requirements of SPS and TBT agreements.

**In Nigeria,** SPS situations and issues are addressed within the National Committee on *Codex Alimentarius* and Food Safety of Nigeria, which is enlarged inter-ministerial committee that includes operators of the private sector and civil society. In line with *Codex Alimentarius* Commission and the African Regional guidelines, the National Codex Committee in Nigeria is responsible for synthesizing and articulating national positions to Codex meetings and guiding national policies on food standards, safety and international food trade issues. Nigeria plays a full part within the limits

of its resources in Codex Alimentarius Commission, the Animal Health International Organization, and the regional organisation under the International Plant Protection Convention. SPS measures are included in the action plan of National Committee on Codex Alimentarius and Food Safety of Nigeria. The Minister of Health is the chair of this committee but the control of standard and safety are under the surveillance of National Agency for Food and Administration Control (NAFDAC) and Standard Organisation of Nigeria (SON). NAFDAC develops SPS regulations on food and enforces the set standards. The Federal Ministry of Trade and Investment is the notification authority for WTO matters in Nigeria including SPS rules. NAFDAC is the Enquiry Point for SPS while SON is the Enquiry Point for Technical Barrier to Trade in Nigeria.

In all four participating countries the institutional framework for SPS management cuts across key relevant institutions. The problem of these institutions remains the lack of the basic scientific data to support policy decisions and strategies.

### **iii) any SPS priorities or issues identified in SPS-related capacity evaluations**

Across the region the need for a risk based approach and hence the establishment of a central national chemical contaminant database serving the food safety risk assessment process was previously identified.

Examples on known chemical contamination in the region posing a real health hazard to consumers. are as follows:

- Climatic conditions are favourable in the sub-Saharan region for the production of mycotoxins. Resources are limited or nonexistent for the regular monitoring of food products and consumers can be exposed daily by ingesting staple foods as rice, peanuts maize, sorghum, smoked fish, etc. Previous results of analyzes presented quantities often exceeding 500 ppb of aflatoxin B1 (one of the most toxic products found to date). Concerns from national risk managers about the presence and the need to know the level of population exposure highlight the need for this project.
- It has been identified that some pesticides used in the process of grain storage (like e.g malathion, profenofos) constitute a real danger to the health of consumers as well as herbicides and insecticides used in primary production. Fraudulent uses of pesticides are suspected and lead to uncontrolled use of pesticides in both, the cereal crops and in market gardening (e.g fruits) grown by farmers. On the other hand, there is a misuse of pesticides in processing and preserving of fish by fishermen
- As well it is assumed that because of the development of industry and a poor organization of waste management that some food commodities are contaminated through environmental

pollution by heavy metals (like e.g, water contamination by lead and rice contamination by cadmium, fish contamination by mercury).

- The presence of antibiotic residues in milk and meat is becoming increasingly worrying because of self-medication without prescription and non-compliance with post-harvest delay by farmers.

To avoid assumptions a comprehensive screening study of the chemical contamination of food to provide a data basis to risk managers for risk ranking and subsequent mitigation measures is needed. The project will contribute to reinsure health authorities and trade operators on the safety of their foodstuffs.

### **3. Links with national/regional development plans, policies, strategies, etc.**

Explain how the project supports national/regional development plans, agricultural/trade/SPS policies and strategies, and any other relevant priorities. If a national/regional SPS strategy exists, indicate how the project supports this strategy. See Qn. 15 (d) of the Guidance Note.

This project supports national SPS policies in the sub region. In this region, traditional export crops still play a major role in the economy of rural areas. For subsectors such as cotton, coffee, cocoa and palm oil, where family farming plays an important role, key recommendations include bringing products up to market standards. The recent Interstate Commission for Pesticides in the Central Africa Region was created for this purpose at a Regional level. In partnership with the private sector, governments intend to help businesses take advantage of export opportunities made available by provisions in the June 2000 Cotonou Agreement and the African Growth and Opportunity Act (AGOA) of the United States. In addition, this project fits perfectly with the policy at sub-regional and regional levels, including: the Treaty of WAEMU Regulation No. 007/2007/CM/UEMOA relating to the safety of plants, animals and food and the WAEMU Treaty of ECOWAS Quality Policy of ECOWAS.

In particular:

**In Benin** the setting of the National Food Safety Authority (ABSSA) has been identified as a priority and has been implemented from an institutional perspective. An action plan for the implementation of ABSSA activities has been drafted in December 2012 and takes into account the need to mobilize partners from the government and beyond to be able to use adequately SPS/Codex risk analysis principles. Within the Benin Poverty Reduction and Growth Strategy (2011-2015) axis 1 (out of 5 axis) focus on acceleration of economic growth.



**In Cameroon**, as stated in the Employment and Growth Strategy Document (2010), the government intends to prepare and implement, in cooperation with the private sector and civil society, an external trade development strategy that will focus on: (i) better controlling marketing systems, (ii) putting into effect trade facilitation sector policies (establishing standards, streamlining procedures, etc.); (iii) improving consumer protection; and (iv) preventing product adulteration and contraband. .

**In Mali**, this proposed project supports its national food policy. It calls for the respect of hygiene throughout the food chain following three basic principles: i) the application of these rules "production to consumption" ii) producer responsibility on food quality, iii) traceability of all products and foodstuffs as well as the ingredients in their composition. The policy endorses the risk-based approach. Finally, it integrates the agreements of the World Trade on the application of sanitary and phytosanitary measures. The overall objective of this policy is to ensure the protection of human health by controlling the quality of food. Furthermore, this project will complement the various national activities undertaken or in progress currently to enhance further export channels.

**In Nigeria** institutionalisation of operations and processes of different players involved in SPS issues has been a priority for a while. The policy for the establishment of a National Food Risk Analysis Centre, a national SPS database management centre; that will be responsible for collation of data and identifying gaps in safety data for food, animal and plant; and the health of consumers has been drawn. The memorandum of understanding between the key players that will run the operations have been drawn and adopted. It remains for the heads of the MDAs to sign and start off. It remains a national priority to run the centre. The national food safety policy encompasses SPS issues with provisions for a risk based approach to food safety regulatory activities. This project by bringing various stakeholders together to focus on technical issues in food safety and throughout a fairly long period of interactions in the course of the project with one another will engender better understanding of each other's role and help implement management measures to reduce chemical risk in the national food chain.

Also describe and analyse the key SPS issue to be addressed by the project. Explain the causes and effects of this issue, notably for animal/plant health, food safety, market access and/or poverty reduction. See Qn. 15 (c) of the Guidance Note.

Rapid urbanization, industrialization and development in Africa have contributed to the emergence of man-made environmental hazards with harmful effects on the environment, food and health. According to the United Nations Environmental Program (UNEP) and World Health Organization

(WHO), the main sources in Africa of such persistent hazards are agriculture, artisanal or industrial mining, manufacturing, electric and electronic production and waste, certain imported products, vector-control purposes, stockpiles of obsolete pesticides, and uncontrolled combustion processes. These new and emerging environmental threats including persistent organic pollutants (POPs), such as polychlorinated biphenyls (PCBs as well as heavy metals, need to be better managed (UNEP, 2002<sup>3</sup> WHO/UNEP, 2008<sup>4</sup>).

**a)-Persistent Organic Pollutants (PCBs and organochlorine pesticides)** POPs in the environment are a risk to human health as they contaminate the food chain. POPs are regulated by the United Nations Stockholm conventions (PNUE, 2001) which recommend their elimination due to their severe adverse health effects in animals and humans. Understanding of the level of food contaminations by these contaminants will facilitate choice of appropriate risk management decisions, according to UNEP recommendations. The active monitoring of the contamination is a key stone to its eradication.

**b)-Mycotoxins:** Cereals are widely produced and consumed in Africa (maize, millet, sorghum, cereal flour, cassava, oilseeds, groundnuts, soya beans). The involved region also exports large amounts of cocoa and coffee; all these foods are susceptible to be contaminated by biological agents (as fungi) that produce mycotoxins when storage is not appropriate. This makes food unsafe for animal and/or human consumption, and not compliant for export.

**c)-Heavy metals:** The presence of these contaminants in food may be sourced from environment as they naturally occur in earth's crust, from anthropogenic activities or may arise during food processing, handling and packaging. They still represent an unknown threat for human health in Sub-Saharan Africa. Intense discussions are occurring in the Codex Committee on Contaminants in Food about the revision of standards for lead, cadmium, arsenic and mercury: Data are necessary to assess the adequacy and acceptability of these proposed standards with the African situation.

**d)-Veterinary drugs residues:** Distribution of veterinary drugs without any control is widespread in Africa. Veterinary drugs are sold over the counter without the need for prescriptions by a veterinarian. There is no legal disposition to guide this activity, leading to distribution of fake and expired drugs and improper use. , Veterinary drugs residues represent a potential threat for human health and contribute to the development of anti microbial resistant strains.

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<sup>3</sup> <http://www.chem.unep.ch/pts/regreports/Translated%20reports/sub%20saharan%20africa%20fr.pdf>

<sup>4</sup> World Health Organization (OMS)/United Nations Environment Programme (UNEP). 2008. New and Emerging Environmental threats to human Health. IMCHE/1/CP6.

**e)-Pesticide residues:** During the regional workshop on SPS Capacity Building in Africa to mitigate the harmful effects of pesticide residues in cocoa and to maintain market access held in Cameroon from 7-12 June 2011, organized by the ICCO, and funded by STDF (STDF/PG/298), CPC presented TDS method and results obtained in Cameroon and how this method can help strengthen SPS capacity building in other countries in Africa. In a context where the pesticide residue regulations published by the European Union, the USA and Japan, if not properly adhered to, could affect cocoa trade and consequently deprive cocoa smallholder farmers and their governments of the much needed revenues for poverty alleviation programmes. Furthermore cocoa producing countries in Africa account of 75% of the world cocoa exports.

In summary, chemical contaminants of interest in this project are those selected and prioritized in each country during the first regional total diet study (TDS) workshop held in Sub-Sahara Africa in 2010<sup>5</sup>. Some of them have been pointed as excessive in foods consumed in one or more of the participating countries.

The methodology of TDS is a useful tool to assess dietary exposure to chemical contaminants. FAO and WHO promote the use of total diet studies as one of the most cost-effective methods for screening purposes as a starting point towards setting future priorities to monitor the potential health impact of chemicals in the food supply. It determines population dietary exposure to chemical substances across the entire diet by analysing main foods prepared as consumed and pooled into representative food groups. Steps characterising a TDS include the selection of foods based on food consumption data to represent as best as possible a typical diet, their preparation to food as consumed and the subsequent pooling of related foods before analysis. This lists of food items contains food produced and exported in the sub-region and abroad.

The export of food products is often essential to the economies of developing countries and should not be hampered by problems related to their safety. To improve their chemical safety also contributes to the development of trade and economic growth particularly in their trade blocs such as the “Economic Community of Central Africa States”; the “Economic Community of West Africa States”, the “West African Economic and Monetary Union” or the “Economic and Monetary Community of Central Africa”.

Furthermore, knowledge of impregnation of food with environmental contaminants, including POPs which are the subject of the Stockholm Convention of the United Nations (2001),

allows the indirect assessment of the level of these contaminants in the environment and contributes to measuring the effectiveness of specific measures to manage risks relating to them. This argument is particularly consistent with the "green section" on the environment, of the Doha Round (Pascal Lamy, Director General of WTO, Yale University, October 24, 2007)<sup>6</sup>.

In addition, unsafe food, whether arising from poor quality or polluted supplies or inadequate treatment and preparation, decreases the nutritional value of meals. This may weaken immune system, thus increasing the deaths associated with infectious and chronic disease among the study population. Taking action through risk based approaches to fight food contamination contributes to reducing neonatal, infant and child mortality and morbidity, protecting growth and development, thus contributing to the actions for the Millennium Development Goal n°4 and 5 of reducing child and maternal mortality ratio<sup>7</sup>.

#### **4. Past, ongoing or planned programmes and projects**

Provide detailed information about relevant past, ongoing or planned national or donor funded projects and programmes related to SPS, food safety, animal and/or plant health in the country or region, as appropriate, as well as any SPS components of broader agricultural or trade capacity building programmes. Explain how lessons learned from previous projects have been taken into account in the design of this project, and clarify how the project will complement these related initiatives. Where applicable, explain how the project relates to the EIF and/or Aid for Trade process. See Qn. 15 (e) of the Guidance Note.

The first regional Training Workshop on TDS for Sub-Saharan Africa was held on March 1<sup>st</sup> to 5<sup>th</sup> 2010 in Cameroon. This workshop was organized by the Centre Pasteur of Cameroon (CPC) (Department of Hygiene and Environment) in collaboration with the WHO (Department of Food Safety and Zoonoses), the FAO (Nutrition and Consumer Protection Division), the WHO Collaborating Centre Met@risk and was mainly financed by Standards and Trade Development Facility. Fourteen participants coming from Burkina Faso, Mali, Senegal, Nigeria and Cameroon attended the workshop. The purpose of the workshop was to strengthen the understanding of TDS principles and methodology by national risks managers, while emphasizing the outline of the regional project proposal and the decisions to be taken in the planning of a TDS. The original project proposal stems from that workshop and was joined by Benin.

**In Benin** efforts were provided with EU funds in the fishing industry, which enabled to stop the auto-suspension of Benin seafood exports to the EU from 2002 until 2005 due to lack of hygiene. A regional STDF project (134) improved capacity building for improving the fish trade performance

<sup>6</sup> [http://www.wto.org/french/news\\_f/sppl\\_f/sppl79\\_f.htm](http://www.wto.org/french/news_f/sppl_f/sppl79_f.htm)

<sup>7</sup> <http://www.un.org/millenniumgoals/>

of selected African countries (for the governments of Benin, Gambia, Mauritania, Senegal and Sierra Leone) between 2008 and 2010. A (STDF) 127 project contributed to strengthen the information system with close collaboration with the private sector from 2009-2011. This project's experts identified several difficulties in the institutional management of SPS issues. These experiences led to the launch of the Benin Food Safety Authority (ABSSA) in May 2012, with the support of FAO, WHO and the Belgian Technical Cooperation. A laboratory has been built and is currently starting its activities and will be a key tool for the surveillance of phyto pharmaceuticals and food.

In 2011, the Centre of Agricultural Research of Agonkanmay (Benin), (CRA-Agonkanmay) completed the implementation of an STDF 48-funded project aiming to help operators acquire the necessary skills to implement good agricultural practices to overcome problems related to mycotoxins contamination in shea and cashew nut production<sup>8</sup>.

In July 2012, three UN agencies (UNDP, FAO and WHO) funded a workshop to assist the government establishing strategic plan to tackle food intoxications due to pesticides in Benin. The need to destroy 400.000 litres of obsolete pesticides (endosulphan) was identified by FAO, currently working on the matter with the financial support of JICA. Other projects are planned in Benin with regard to food safety, including education on hygiene with the widespread dissemination of a WHO document (*5 keys to safer food*) will contribute to the strengthening of the pre-requisite to any food safety programme, including HACCP.

Although those projects were correctly implemented the latest (STDF 127) showed that improving SPS communication alone is not enough for enhancing food safety and commerce as such. The lessons learnt will be taken into consideration from the design of this project, as it aims to be able to show how the continuity between risk assessment, risk management and risk communication can lead to the definition of replicable good practices with regard to SPS measures/Food Safety.

**In Cameroon**, the chronic dietary exposure of the inhabitants from Yaoundé to 46 pesticides residues was assessed according to the TDS approach. These pesticides included forbidden and Organochlorines pesticides of the GEMS/food comprehensive list, homologated pesticides, authorized and sold pesticides locally. The study was funded by FAO (Nutrition and Consumer Protection Division, Rome) and the French food Safety Agency (AFSSA)/ (Direction de l'Evaluation des Risques Nutritionnels et Sanitaires, France). Samples were analyzed in "Qualtech" laboratory, France. Currently, only Cameroon implemented a TDS in Africa and it is crucial that CPC is coordinating the technical part of the study. So far only pesticides were analyzed and the

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<sup>8</sup> <http://www.standardsfacility.org/PGProStat.htm>.

present project will complement the existing database with data on heavy metals, POPs, pesticides and veterinary drug residues from another selected region in Cameroon.

**Mali** is currently facing a number of constraints related to the globalization of world trade, the strengthening of sanitary and phytosanitary requirements and the proliferation of private standards. Despite the multiplicity of agencies and support of diverse business areas, it appears from the various findings and recommendations (Third Session of the National Council for Food Safety (CNSSA 2009), the National Workshop on SPS (PNI SPS 2008), the fourth session of the National Codex Committee (NCC 2008), evaluation of agri-food plants in Mali (ANSSA 2008)) that the national infrastructure for food safety is not consistent with the terms of the SPS Agreement and that, to maintain and to facilitate access for food products to markets in Mali sub-regional and international, continued efforts must be made in the application of Sanitary and Phytosanitary (SPS) measures.

Recent projects and programs to support the application of SPS measures are: the Quality Programme in West Africa (PQAO) in which the technical barriers to commercialisation of mango, shea, cattle and meat was identified, PIP / COLEACP Programme Competitiveness and Agricultural Diversification (PCDA) in which sector guides for mango export of good practices were developed, the Project Integrated Framework in which awareness of exporters on sanitary and phytosanitary was raised, Helvetas Mali in which the mango export through organic certification was the main objective, a study on mycotoxins in sorghum in Africa (FAO Trust Fund / WHO). Most recently a field survey over three months was held in Bamako to analyse muscle samples for veterinary drug residues. Only two of these projects generated data for risk assessment which can be compared and complemented with those generated by the present project and which will serve most of the stakeholders of the all above listed projects.

**In Nigeria**, the experience gained at the current STDF SPS Project 172 on the improvement of Quality Value Chain of Sesame seed and Sheat nut and butter has been of tremendous assistance in how to run a multisectoral, multi products international project. The need to identify, secure the commitment and bring into fold all relevant bodies that are primarily involved in the day to day running of the outcome after the life of the project has been taken into consideration. This is key, to sustainability of the aim of the project after its lifespan.

The focus of that project was on developing an effective aflatoxin control system for sesame seeds and shea butter exports. It is however expected that the quality control system established would provide quality control for all stored cereals and pulses for local consumption and export. Therefore

it is expected that the interventions from STDF Project 172 will invariably be applied to any similar oil seeds foods from this current study, as mitigation measures.

## 5. Public-public or public-private cooperation

Explain how the project promotes cooperation between government organizations involved in managing SPS issues and/or with the private sector. See Qn. 15 (f) of the Guidance Note.

The main goal of this project is to enhance risk based food control in the participating countries. This involves that risk assessors and risk managers at national level collaborate in order to ensure that the data generated through this project will be used to prioritise management options and eventually to monitor whether implemented control measures have succeeded in reduced contamination level. This project will allow a reinforcement of cooperation between different public sector stakeholders through each national steering committee. The project will involve collaboration between government regulatory officials, laboratory and field technicians in each country during the implementation phase. Some laboratories from the private sector may find a key role to play both in the project implementation and in the capacity building . In particular, the CPC will be the regional coordinator of the project.

In addition, the private sector through their private industry representatives ( industry and farmer ) and consumer protection associations will be implicated during the project outcomes and results dissemination phase through targeted communication steps.

A close collaboration and partnership with all involved parties is crucial for the successful implementation and, in particular, for the sustainability of the project. This is being addressed in the logical framework.

## 6. Ownership and stakeholder commitment

Which stakeholders (e.g. government agencies, private sector organizations, relevant local coordination mechanisms on SPS, trade, agriculture, environment and/or private sector capacity building) actively support this project? Explain how these stakeholders would be involved in the project. **Attach letters of support** from each of these organizations. See Qn. 15 (g) of the Guidance Note

**National project stakeholders and key partnerships** in each of the four countries include the following (letters of support in appendix 4):

- Ministry of Trade and Industry, through their national Codex committee:
  - provide food trade, food manufacturing and policy information
  - member of the national coordination team
- Ministries of Agriculture :

- Give information on: a)- animal and crops husbandry, b)-list of food exported and imported per country, c)- the flow of food trade at national level, d)-list of imported pesticides, authorized, suspected non authorized as well as obsolete pesticides, d)- farming habits at national level. Thus contributing to elaboration of the food list and the pesticide list.
- member of the national coordination team
- Ministry of Public Health:
  - provide information on food safety assessment and policy
  - member of the national coordination team
- National food safety agency (except Cameroon):
  - national coordinator of the project
  - risk assessors
- National bureau of statistics:
  - Provide food consumption data (Household Budget survey) by elaborating quantitative food consumption data fit for TDS
  - member of the national coordination team
- Laboratory of analysis (governmental and private):
  - Contribute to the elaboration of the food consumption data food list
  - Perform Sampling plan including purchase, preparation of food as consumed, storage and shipping of the samples
  - Possibly analyse the samples
  - Estimate the exposure in collaboration with assessors ( food safety agencies)
  - member of the national coordination team ( except in Cameroon where main national coordinator)
- Research institutions for agriculture development: As in the soudano-sahelian area subject to global environmental changes, no study was conducted on dietary exposure to agricultural inputs (pesticides etc.) more and more used by farmers the results and products developed through this project will be directly used by agronomist, soil scientists and food scientists.
- Consumer protection organisation (Nigeria only):
  - Communicate on chemical dietary risks for human
- Private industry export association (Nigeria only)
  - Implement good manufacturing practices for industries

**International project partners** are as follows:



- FAO regional office in Harare, Zimbabwe: Implementing agency and part of the international steering committee
- FAO Headquarter office in Rome, Italy: Technical adviser and part of the international steering committee
- WHO headquarter office in Geneva, Switzerland: Technical adviser and part of the international steering committee
- WHO Benin country office: National and regional coordination and facilitation role and part of the international steering committee

The Competent Authorities (under the different ministries) will have a sound risk assessment basis to carry out activities related to the safety of agricultural products, the implementation of Good Agricultural Practices in rural and urban areas. carry out activities related to food safety including (i) preparation of public and private sectors, and civil society for the implementation of WTO's Agreement on the application of Sanitary and Phytosanitary Measures, (ii) improvement of Good Manufacturing Practices within companies, (iii) improvement of capacity building of laboratories, (iv) certification of companies, and (v) licensing import of food.

## **II. PROJECT GOAL, OBJECTIVE, OUTPUTS & ACTIVITIES (LOGICAL FRAMEWORK)**

### **7. Project Goal / Impact**

What is the overall goal of the project? The goal should describe (in one statement) the expected longer-term impact or positive change to which the project will contribute, particularly in terms of market access, the SPS situation and poverty reduction.

The overall goal of this project is to strengthen the risk-based food control in Sub-Saharan Africa by the mean of the Total Diet Study (TDS) as a tool to assess food chemical concentration.

This project aims to provide risk managers with the scientific basis needed to carry out its activities to protect human health and to promote safe food production and trade at both national and international level.

By achieving this goal three main long term impacts of this project are suspected to be a) to contribute to improving market access for producers through increased compliant foodstuffs with international standards b) to contribute to reducing poverty thanks to a reduced burden of foodborne diseases with regard to human, animal and plant health and c) to increase the actual contribution of African countries to the Codex Alimentarius works.

The Codex Alimentarius Commission (Codex) is one of the three standards organizations, together with IPPC and OIE, on which WTO members are supposed to refer to, as far as their SPS methodologies are concerned. Thus, improving the contribution of African Nations to the Codex

activities increases the legitimacy of WTO rules under the SPS Agreement, as well as the relevance of Codex-related activities and Standards, as such (long term impact c).

Severely underestimated, the burden of foodborne diseases is both accountable for invalidity or lack of productivity and for a heavy cost on African Health Systems and National Budgets and therefore represent a significant obstacle to development (long term impact b).

Most of all, due to a lack of both 1) risk assessment analysis with regard to food safety/contamination of food 2) adequate risk management and risk communication subsequently implemented to face the actual identified hazards, many African producers do not access or lose access to food markets (long term impact a). This project (if results are correctly used) in the long term will help increase confidence in the supply chain which promotes trade of safe food and will reduce global economic trade burden from these contaminants in food. In addition, it will also offer guidance for corrective actions for selected chemicals of concern for unsafe food.

## **8. Target Beneficiaries**

Identify the final beneficiaries (e.g. small farmers, producers, workers, consumers, etc.) and explain how they are likely to benefit from the project, quantifying these benefits as far as possible. Wherever possible, the application should clarify how women (e.g. female producers, traders, workers in food business operations) are expected to benefit. See Qn. 15 (h) of the Guidance Note.

- The primary target beneficiaries are the same than those previously listed in chapter 6 ( under stakeholder commitment). Mainly all ministries involved in food safety ( public health, agriculture, trade, research) will directly benefit from this project by having access to the database of chemical exposure estimates in each country. And each of these beneficiaries can use this database in order to target and prioritise further their respective activities in food control and substantiate their decisions when implementing management options to increase the effectiveness of food control systems. In addition, technical staff (at least 20 per country) ( food safety risk assessors, data managers, laboratory technicians) will benefit from this project as they will be trained to conduct a TDS in their respective country.

Additional final beneficiaries are as follows:

At national level:

- consumers: should benefit from the long term goal by having access to a larger choice of food commodities with lower level of contamination levels

- operators working in the field of agricultural inputs: the developed database will be a reference to put more attention on the products at risk in order to sensitize inputs providers as well as users with the hope to avoid more contaminations and side effects of any improper use of inputs or agricultural techniques.
- farmers: will benefit through measures taken by the decision makers to assist them with good production and processing practices in order to improve the quality of food products.
- Food producers, wholesalers, retailers: likewise, will benefit through measures taken by the decision makers to assist them with good production, processing, transportation and storage practices in order to improve the quality of food products

At regional level:

- the West African Economic and Monetary Union (UEMOA-WAEMU) will benefit from the data provided to implement a more efficient and more pertinent surveillance of contaminants in food at regional level.
- the professional bodies and agencies such as the Coalition for the Promotion of the Urban and Periurban Agriculture in Africa (CAUPA), as well as the *Pole Régional de Recherche Appliquée aux Systèmes Agricoles d'Afrique Centrale* ([www.prasac-cemac.org](http://www.prasac-cemac.org)) and the Interstate Commission for Pesticides in the Central Africa Region ([www.cpac-cemac.org](http://www.cpac-cemac.org)): the targeted chemical compounds and commercial products and their origins will serve to plan activities to prevent hazards in the sub-region whenever it has been demonstrated.

## 9. Project objective, outputs and activities (including logical framework and work plan)

Describe the immediate objective (purpose or outcome) of the project, the outputs (measurable results that contribute to the objective) and the activities that will be carried out to achieve the specified outputs. This description should be based on, and consistent with, the logical framework for the project.

The immediate objective of this project is to improve understanding on food contamination levels origin in Benin, Cameroon, Mali and Nigeria. To meet this objective, 6 outputs and related activities to be carried out are described below.

### Output-1: Strengthened capacity to conduct a TDS

Activity-1-1: Documentation for planning and sharing of knowledge on currently available data in participating countries and beyond at the commencement of the project.

This initial inventory will consist in listing the data available for conducting the project (food consumption data, household budget survey, economic and trade statistics). This inventory should

also include results from former projects or document aiming to identify and prioritize food chemicals at risk. Finally, up-to-date policy documents and strategic reports should be collected if available.

Activity-1-2: Three days Regional conference on “Implementation of a regional Total Diet Study for a risk-based food control in Sub-Saharan Africa.”

The regional kick off meeting held within the 3 months following the launch of the project will allow the technical food safety staff from each of the participating countries to understand the proposed approach and to prepare the regional protocol. Sixteen technical food safety staff (4 per country) under the supervision of national coordinators will be involved.

Activity-1-3: One day National stakeholders meeting (1 meeting per country).

This national workshop will aim to reinforce the national network and its coordination by involving food safety professionals from public administration, food safety agencies, trade agencies and industry. Presentations should be given by national coordinators of the project and participants will share their experiences and expectations.

Activity-1-4: Two days training for national technicians involved in the collection, preparation, transportation and storage of samples.

Food sampling and preparation are critical steps that should be as close as possible to the preparation habits in the population. These steps can affect the accuracy of the assessments. Consequently, care has to be taken to address all factors that could affect the results. Thus, after the SOPs are being developed in each country, a 2-days training on SOPs is planned in this project to assure a consistent implementation of the sampling plan. This will be done under the supervision of the coordination team (about 5 members). In each country, the beneficiaries will involve about 10 people including sample collectors, lab technicians and data manager; preferably a same team will be trained for sampling in each selected region of a country.

Activity-1-5: Acquisition of food sampling and preparation tools.

In order to avoid any deterioration or cross contamination of foods, materials are needed to set up a functional kitchen per country to prepare and store the samples. The following equipment is needed to reach a common level of quality and the missing material in each country should be purchased:

Deep freezers, refrigerators, coolers (100, 42, 20 liters), and gas cylinders with rechargeable butane, Whirl-pack packaging plastic (pesticides, veterinary drugs and mycotoxins for solid food analysis, polyethylene vials (100 ml) for metal analysis, food glass bottles (pesticides, veterinary drugs and mycotoxins for liquid food analysis), balances (0-3 kg) and food preparation materials including common kitchen utensils, and blenders. Furthermore laptops will be needed for data management and processing.

## **Output-2: TDS food lists are elaborated**

### Activity-2-1: Preparation of food consumption data.

Based on the inventory of data from the output 1, the national food consumption data will be harmonized and prepared to fit the purpose of the TDS approach. In the likely situation when no individual consumption data are available, Household Budget Survey will be transformed and modelled to obtain consumption data of food “as consumed” per adult equivalent (AE) of the study population. This transformation can be done through the main following steps: (a) selection of household food purchases from the city/region of concern, and the whole nation (b) calculation of the annual purchase quantity (c) elaboration of a price database of food purchases, (c) transformation of purchased food into food as consumed in  $\text{g}\cdot\text{day}^{-1}$  per adult equivalent using yield and edible factors, age and sex specific adult-equivalent factors. This activity will be ended by the availability of a harmonized food consumption data fit for TDS per country.

### Activity-2-2: Elaboration of a food list corresponding to 80-90% of the total diet and determination of the level of pooling of samples.

Among the foods consumed by population receiving a normal energy intake ( $1200\text{-}3500 \text{ kcal}\cdot\text{day}^{-1}$ ), those consumed over  $1\text{g}/\text{day}$  per AE in the overall population will be selected, similarly, those consumed by 15 % of household or presenting a high potential risk regarding the selected chemical contaminant will also be included. The overall foods included into the TDS food list should cover at least 90% of the food intake and be as close as possible to the whole diet. Additional foods considered being particularly important for exposure such as highly contaminated or highly consumed by certain sub-population should also be included. These foods will be selected from the harmonized food consumption data.

One of the strengths of the TDS is to provide an average level of contamination for each food category under consideration. Depending on the resources available and of the anticipated heterogeneity in the contamination, smaller or broader categories can be considered for sampling (e.g. biscuits vs fine bakery ware vs cereal products). The number of analyses will be adjusted by pooling individual food items. The optimal degree of pooling needed to account for the variability in the contamination and to preserve accuracy of the calculated exposure will be determined.

### Activity-2-3: Selection and inclusion of food of trade interest.

As agreed during the PPG Workshop held in Mars 2010<sup>11</sup>, the national food lists based on food consumption data should be completed by food of particular (actual or potential) trade interest for the countries involved. These foods could be exported at regional and international level. The initial list established in 2010 will be updated. Assessing the safety of such foods should increase market access at regional as well as at international level.

Activity-2-4: Elaboration of the final food list.

Combining the food the most consumed and the most exported will define the final food list for sampling. From each of the 4 national lists, the food of common interest for all the countries will be identified and treated separately in a harmonized way for sampling and analysis (Precise food definition and analysis to be performed for all countries in the same laboratory).

### **Output-3: Food contamination data are generated**

Activity-3-1: Preliminary survey on places of purchase and food preparation methods in each country.

Information will be collected at different levels of the agro-food chain: (i) areas of food production, (ii) areas of food sales, (iii) operators of food processing (agro-industrial and artisanal), (iv) street restoration, school and businesses canteens, restaurants and hotels.

Food industry, restaurants and typical household will be enquired to find out where are the most frequented food purchase places and the major food preparation habits and recipes. This preliminary survey will allow (i) selection of sampling points in the city of concern, (ii) realization of a recipe book for TDS, (iii) estimation of the amounts of food taking out of the household compared to food eaten in households, and finally elaboration of a catalogue on the main preparation mode of the most consumed foods, and iv) validation of the priority contaminant list per food sample to be analyzed.

Activity-3-2: Elaboration and international review of a sampling, purchasing and sample preparation plan.

A sampling plan for the selected foods (see output 2) will be elaborated by a panel of specialists of Total Diets Studies. This sampling, purchasing and preparation plan will be adapted from the procedures developed for the TDS in New Zealand<sup>i,ii</sup>, in France<sup>iii</sup> and in Cameroon. The sampling plan documents will also contain instructions for purchasing, conservation, delivery of food to storage places before shipment to laboratories. These instructions documents will be made available before a 2-days training of interviewers and lab technicians by the national coordination team and harmonized after a pre-test of validation as stated above (see output 1, activity- 1-4).

A computerized database will also be designed. More improvements on this document (taking into account lessons learn after the implementation of the sample plan) will lead to a TDS training manual on food sampling, purchasing and sample preparation for dissemination in other (developing) countries.

Activity-3-3: Selection of laboratories.

A call for tender will be published based on the number of food samples and the number of chemicals to be analysed. Selected laboratories should fit the recent standards in term of quality insurance. Responses will be analysed by the International Project Steering Committee and the selection will be done. The justification for overseas analysis would lie on the quality of the data: chemical analyses should be performed in specific food matrices at the requested LOD/LOQ, using a well-implemented quality assurance system covering the whole TDS process including sample extraction, analysis and data interpretation). The selected laboratories should be able to analyse samples from the overall regional sub-Saharan TDS in order to ensure consistency for samples on the regional list.

Activity-3-4: Sampling, preparation, storage and transportation of samples to the selected laboratories.

A few thousands of food samples will be collected on a period defined in previous activities in each country. These operations will be implemented by sample collectors and lab technicians under the supervision of members of the coordination team. They will abide by the established and agreed plan and the schedule for completing each step, from collection to food preparation. The food will be prepared with common drinking water of the study population using salt and usual kitchen utensils, as recommended in the Joint guidance document of EFSA, FAO and WHO<sup>9</sup>, to simulate the same exposure experienced by the study population. After their homogenization, the food samples will be stored at -20°C and shipped at low temperature in laboratories for analysis. An illustrated catalogue of fresh and prepared foods will be elaborated. Yield and edible factors, and water content of foods will be determined during preparation/cooking process.

Activity-3-5: Food analysis: laboratory tests.

Chemical analysis will be performed by laboratories selected in activity 3.3. The limits of detection and quantification required for food contaminant analyses for TDS should be lower than regulatory requirements in order to be used for the purpose of risk assessment.

#### **Output 4: Risk assessments for harmful food chemicals**

Activity-4-1: Exposure assessment for sub-Saharan African countries based on food consumption data and analytical results for food contamination.

This work will be done under the supervision of the International Project Steering Committee and will consist in: (i) validating harmonized quantitative consumption data, (ii) preparing occurrence

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<sup>9</sup> [http://www.who.int/entity/foodsafety/publications/chem/tds\\_guidance/en/index.html](http://www.who.int/entity/foodsafety/publications/chem/tds_guidance/en/index.html)

data, (iii) matching occurrence data and consumption data, (iv) extracting relevant dietary exposure data at national and regional levels.

Activity-4-2: International workshop on risk characterization.

This workshop aims to characterize the risk for national populations according to international criteria including: (v) identification and selection of national (if available) or international health based guidance values (HBGVs) or other toxicological reference values to be used for each chemical contaminants, (vi) characterization of the risks related to each selected chemicals based on a comparison of exposure levels with corresponding HBGV. Two members of the national coordination team including the computer manager per country and the regional coordinator will participate under the supervision of two international risk assessors.

### **Output 5: Knowledge shared and stakeholder groups sensitized on the outcome of the TDS**

Activity-5-1: To establish of a harmonized database.

All data and information collected or generated during the study will be organized in a database accessible for participating countries. This database should remain updated and maintained by countries after the end of the project.

Activity-5-2: Two days National stakeholders meeting (1 meeting per country).

These stakeholder meeting will consist in reporting back the results of the study to the stakeholders involved in activity 1.3. Participants will discuss the achievements compared to their expectations and propose follow up initiatives.

Activity-5-3: Two days Regional meeting of decision makers in the field of food safety and food trade from the 4 countries.

The expected long term goal of this project is the strengthening of a risk-based approach for food safety. This meeting will start with the presentation of the key results from the study and the main conclusions of the 4 national stakeholder meetings (2 participants per country). Based on these elements and on former discussions described in activity 1.2, the decision makers should initiate a regional strategy for risk management including monitoring and control plan for chemicals identified as critical either for public health or international trade. The identification of additional food sectors which can benefit for future market access should also be performed.

### **Output 6: TDS outcome translated into risk management, communication and policy.**

Activity-6-1: Specific assistance to food safety authorities for prioritized chemicals in taking appropriate mitigation measures following TDS results (specific workshops, in country travels, documents production and dissemination, communications through media) at pilot scale.



This activity will consist in a follow up during the 6 last months of the project to support the food safety professionals and in particular risk managers to implement concrete follow up actions.

Activity-6-2: Documentation of good risk analysis in the African context practices.

The good practices for risk analysis with a particular focus on food monitoring, risk assessment and risk communication will be developed based on the output 5 and disseminated across the region.

Activity-6-3: Monitoring and evaluation.

**Attach:**

A logical framework summarizing what the project intends to do and how, what the key risks and assumptions are, and how outputs and outcomes will be monitored and evaluated (Appendix 1). See Qn. 15 (j) of the Guidance Note and the template attached to this application form.

A detailed work plan indicating the start and completion date of the project, as well as sequence in which activities would be carried out (Appendix 2). See Qn. 15 (k) of the Guidance Note and the template attached to this application form.

Terms of Reference (TORs) for key national/international experts to be involved in implementation of activities included in the work plan. The TORs should include information on specific tasks and responsibilities, duration of assignments, number of missions (if appropriate), and required qualifications/experience (Appendix 6). See Qn. 15 (l) of the Guidance Note.

**10. Risks**

Briefly discuss the major risks identified in the logical framework and explain what actions will be taken to mitigate or manage them.

Actions to be taken to mitigate and manage risks identified in the logical framework include:

Risk	Action (s)
Commitment of data owners (food consumption data) is not provided	Letters of support to the project were submitted by the national bureaus of statistics
Key national players in the field of food safety will not be identified; inadequate participants to the workshops	For each meeting (training workshop, national stakeholder and consultation meetings) strict criteria will be listed to attend the meeting and participants have to submit their CV and document their experience and expertise to ensure the correct audience is present
Countries not deemed ready to proceed to data collection activities	3 out of 4 participating countries had already received initial training on TDS. Training workshops in this project will be carried out

	by highly qualified technical experts to ensure countries will be able to implement the different steps to ensure TDS food lists will be prepared and samples will be collected. Project countries have demonstrated motivation and dedication.
Unfruitful call for tender	A short list will be prepared based on expression of interest before launching the tender
Incorrect sampling or degradation of some samples	Sampling plan will be reviewed by external experts. Duplicate samples will be stored separately

In general:

- planning, monitoring and evaluation of the project will be realised at regular intervals through activity reports (twice a year) on the basis of indicators and verification means given in the logical framework matrix (Appendix 1)
- operational teams will be evaluated by the regional coordination under the supervision of the implementing agency
- the project will be implemented by FAO and might benefit from its audit and monitoring services to supervise financial consistency

## 11. Sustainability

Explain how the results of the project will be sustained in the longer-term, addressing financial and institutional sustainability. See Qn. 15 (i) of the Guidance Note.

The trained professionals and the newly established database and network will serve as the basis of the results sustainability. Output 6 of the current project ensures that the results will be understood and will serve the risk managers and will result in a regional policy development. The database itself will be made available and allow for updates. Translations of risk assessments resulting from the current project into good practices in order to mitigate harmful chemicals from the diet will support national and regional SPS activities. The project results will be shared and disseminated at continent level and will certainly leverage other TDS projects in Africa. The acquired experience as well as the decision making tools will also be used as training materials both at the academic and institutional levels. Internet access to the project teams and various results will equally be a way to make widely available the data as long as possible.

### III. BUDGET

#### 12. Estimated budget

Provide a detailed breakdown of the total project budget (in US\$) using the table in Appendix 3 for guidance. The budget may be prepared as a separate Excel chart or as a table in the project document. It should be prepared on the basis of the outputs identified above, and the resources needed to complete the specified activities. The budget may include expenditures for expertise, travel, training, workshops, minor equipment items, project management, general operating expenses, etc.

The budget should clearly specify: (i) the amount requested from STDF; (ii) the applicant's own contribution to the project, which may be in the form of financing or an in-kind contribution (e.g. staff time, use of premises, etc.) and is subject to audit (see Qn. 12); and (iii) the amount (if any) requested from other donors. See Qn. 10, Qn. 14 and Qn. 15 (m) of the Guidance Note for more information on the budget, and what the STDF funds (and does not fund).

The detailed budget per activity according to the logical framework is included in the separate excel file. The total estimated budget requested to STDF amounts to 1,063,708.40 US \$ (without the implementing %).

In addition, the implementation of this project will incorporate the following measures to achieve a minimum purchase of materials:

- all purchases less than 200 USD direct (cash) will be paid with a bill. Above this amount and up to 100,00USD, purchases are made on purchase order given to suppliers
- wherever possible, at national level, meetings to launch the project will be combined with the training workshop
- chemical analysis of food will be done in selected laboratories after a call for tender destined to regional (IITA) and international laboratories. Only laboratories providing a competitive Quality/price performance will be selected.
- Premises (offices, conference rooms), rolling stock and information technology (projector, computer, internet connection) of the organizations in charge of the national coordination will be made available, wherever possible, as in –kind contribution

#### 13. Cost-effectiveness

Explain how the project may be considered a cost-effective contribution to addressing the SPS problem(s) identified above, compared to alternatives (including no action). See Qn. 15 (n) of the Guidance Note.

TDS method is recognized by *Codex Alimentarius* and is described as a cost-effective screening tool for assessing chemical risks from food. The study is designed in order to measure the average amount of a given contaminant ingested by a studied population. This study differs from chemical monitoring programs because it focuses on chemicals in the total diet rather than in individual targeted foods (suspected to contain high levels) and it takes into consideration the impact of washing, peeling and cooking on the decomposition or the formation of chemicals, since the foods are analysed as consumed by the study population (GEMS/Food, 2007).

Consequently, instead of implementing for each contaminant an individual monitoring plan (study) (which is very costly) TDS provides exposure estimates for a series of selected contaminants in one single study. Currently, none of the 4 participating country has regular monitoring plans for selected chemicals in place. This TDS will be the first study of its kind in the region and its results will allow to prioritize resources.

#### **IV. PROJECT IMPLEMENTATION & MANAGEMENT**

##### **13. Implementing organization**

Identify the organization(s) responsible for project implementation and attach evidence of its technical and professional capacity to implement the project (i.e. a list of achievements and record of financial probity). If an STDF partner or third party acceptable to the STDF is proposed to implement the project, attach written consent from that organization (Appendix 5). See Qn. 15 (o) of the Guidance Note.

The project will be implemented by the sub regional FAO office in Harare, Zimbabwe with the support of the food safety and Codex unit under the Agriculture and Consumer Protection department of FAO.

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Technical advisory support will be provided by the JMPR Secretariat of WHO and by FAO HQ.

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Project implementation coordination and support at regional level will be provided by WHO Benin office.

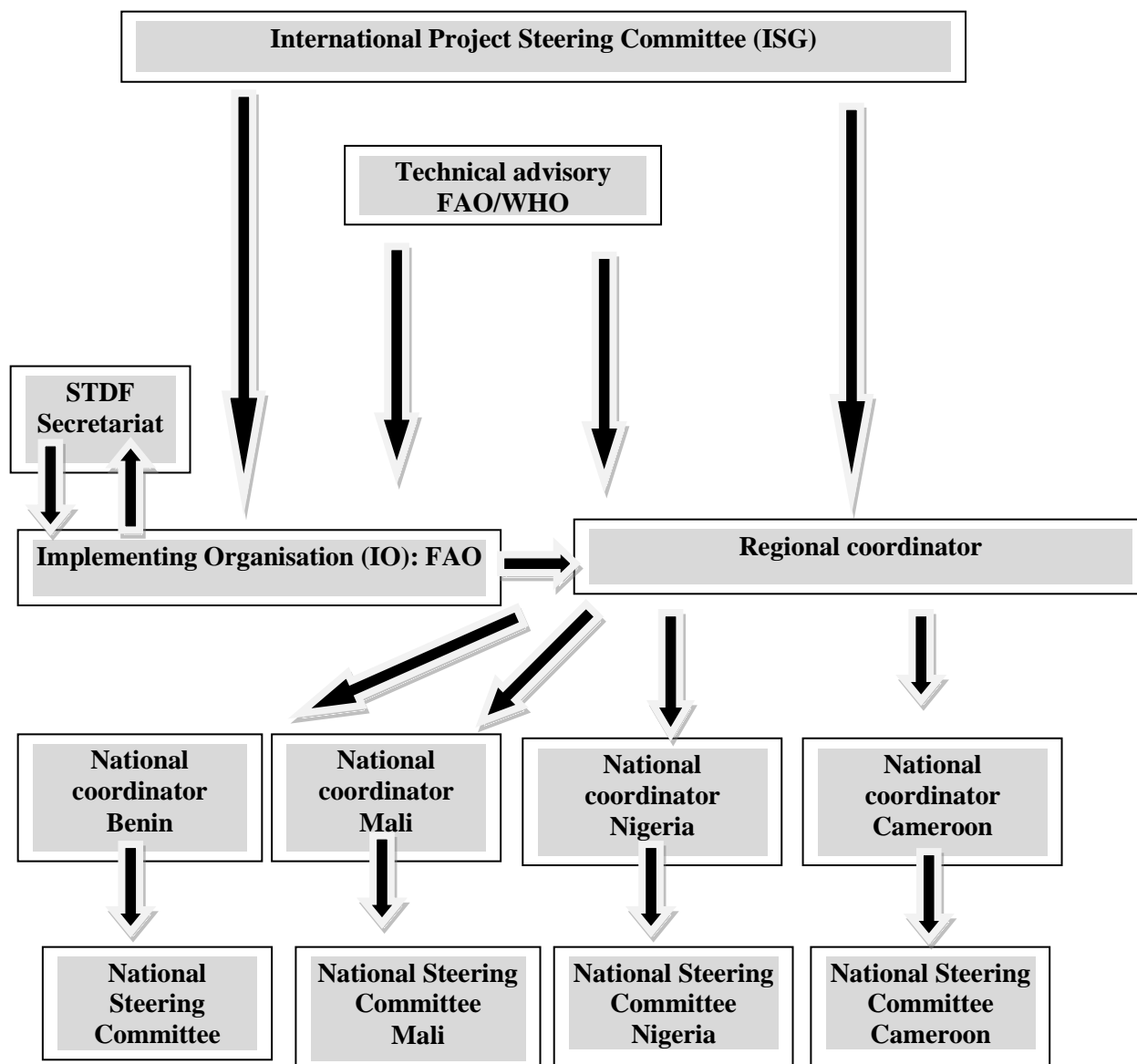
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## 14. Project management

Explain how the project will be managed, clearly indicating roles and responsibilities. If a Project Steering Committee is to be established for this purpose, specify its role, membership and meeting schedule, and explain how decisions will be made, etc. See Qn. 15 (p) of the Guidance Note.

Proposed management scheme below:



The project will be under the purview of an **international project steering committee (ISC)**. The ISG will have the mission to coordinate and monitor activities in the implementation of the project. In addition, it will ensure the active participation of all parties involved in the implementation of the project. In doing so, the ISG will:

- define the strategic guidelines of the project
- ensure regional harmonization and synergy with all other regional SPS programs

- validate the work programs proposed by the implementing agency and the regional coordinator
- follow the progress of the project
- approve technical reports
- lead to reflections on the possible adjustment of priorities for action
- Approve activity reports on the implementation of the project
- ensure that the project is monitored on a regular basis
- monitor the dissemination and knowledge sharing of the project results

The ISG is composed of representatives from FAO and WHO, both from headquarters and regional office, of the regional coordinator and of the national coordinator of each participating country. It shall meet at least once a year but can hold additional virtual meetings if needed.

The **implementing organisation** will be the FAO sub regional office (committed through Dr. Jean Kamanzi) which will be the lead agency in implementing the project. It will coordinate the project between the STDF secretariat (Le Mentec Kenza) and the regional coordinator (CPC). It will contract and supervise the regional coordinator in managing the project by ensuring that financial, administrative and logistical obligations are fulfilled at regional and national level. FAO sub regional office will make financial transfers to the regional coordinator and national coordinators of Benin, Mali and Nigeria in charge of dispatching their resources in their respective countries according to the planned activities. FAO or WHO country offices can assist with follow ups and verifications. Recipient agencies will provide itemized expenses to the regional coordinator who is responsible of preparing the financial report for the implementing organisation. The latter has to verify and validate it.

WHO Benin office will provide assistance to coordinate the regional aspects by providing a technical officer (Luc Frédéric Ingenbleek). The services of the technical officer will be in kind. He will work closely with FAO sub regional office and the regional coordinator.

Further **technical assistance and advice** ( exposure assessment, risk assessment, TDS) will be provided by FAO and WHO representative skills in close collaboration with the regional coordinator and national coordinators, if needed.

The responsibility of **regional coordinator** is taken by the Centre Pasteur of Cameroon (CPC). It is a public administrative institute endowed with financial autonomy under the double tutelage of the Ministries of Public Health and Finance. Created in 1959 in Yaoundé (Centre Region), it extends to the north region in Garoua and in the coastline region in Douala. CPC is a member of the International Network of Pasteur Institutes and shares in her principal mission the fight against

infectious disease and assures 4 principal missions: service delivery, Public health interventions, Research and Training. As CPC has implemented already a local TDS on pesticides it is well placed to take on the role as regional coordinator. It will coordinate the activities at regional level by supporting the national coordinators to deliver their technical inputs and make the linkage between the different national coordinators and the implementing agency. A contract agreement will be signed between the CPC and FAO sub regional office to execute its tasks. All the logistics related to regional training activities and workshops will be executed by the regional coordinator.

In addition to its regional coordination role CPC will be the **national coordinator for Cameroon** in order to manage activities at national level. CPC is committed through **Dr Gimou Marie Madeleine**, Centre Pasteur of Cameroon, BP 1274 - Yaoundé – Cameroun - [gimou@pasteur-yaounde.org](mailto:gimou@pasteur-yaounde.org), Tel.: +237 22 23 10 15 - + 237- 99 61 90 31 - Fax : + 237 22 23 15 64. Website: [www.yaounde-pasteur.org](http://www.yaounde-pasteur.org))

At national level, in order to manage and implement the project the main **national coordinating agency** in each country is detailed as follows:

In **Benin**, the National Food Safety Authority (**ABSSA**) will be the national coordinator. The commitment is represented by Mr Yessoufou ALAMON, National Food Safety Authority DG (ABSSA), Cotonou, [abssabenin@yahoo.fr](mailto:abssabenin@yahoo.fr), [dpqc@intnet.bj](mailto:dpqc@intnet.bj), Tel.: +22966244924

In **Cameroon**, as already mentioned above, **CPC** will be the national coordinator to manage and implement the project.

In **Mali**, the National Agency for Food Safety (**ANSSA**) District 305 River Street PO Box E: 2362- Bamako – Mali; Tel 00223 20220754/ Fax 00223 20 22 July 47 will be the national coordinator. The commitment is represented by Pr Akory Ag IKNANE, Director General of ANSSA, BPE: 2362 Tel (00223) 20 22 07 54 Fax( 00223) 20 22 07 47, mobile: +223 66 76 00 75, Bamako Mali, email: [akory.agiknanegmail.com](mailto:akory.agiknanegmail.com)

In **Nigeria**, the National Agency for Food and Drug Administration and Control (**NAFDAC**) with support from the Federal Ministry of Health, will be the national coordinator. 445, Herbert Macaulay Way Yaba, Lagos, Nigeria, Tel: +234 1 740 8962, + 234 805 317 0810+234 813 797 9705. The commitment is represented by Ms Jane Omojokun, Deputy Director (Regulatory affairs), Tel: +234 8033 338 184; E-mail: [regulatory.affairs@nafdac.gov.ng](mailto:regulatory.affairs@nafdac.gov.ng) or [omojokun.j@nafdac.gov.ng](mailto:omojokun.j@nafdac.gov.ng) or [janeomojokun@yahoo.com](mailto:janeomojokun@yahoo.com)



The main tasks of the national coordinating agency are:

- To manage the project from the administrative and financial point of view (needs to designate roles and responsibilities )
- To manage the project at national level from the technical point of view:
  - To collaborate with all national stakeholders ( governmental bodies, private sector, research institutions, consumer protection association, food export association etc)
  - To constitute a **national steering committee**, whose role will be to supervise (scientifically and from a management point of view) the planning and implementation of the project in each country.
  - To coordinate distribution of roles and responsibilities at national level to implement the different activities project
  - To develop the semester programs of activities and prepare quarterly activity reports
  - To ensure that communication channels are in place through which all involved partners can collaborate
  - To ensure that all technical work is implemented at national level according to planned activities and outputs as outlined in the logical framework
  - To ensure that all logistics to organise national training activities and workshops are provided
  - To ensure national harmonization and synergy with all other national SPS programs
  - To disseminate and share knowledge and results of the project
  - To monitor how results will be used at national level

## V. REPORTING, MONITORING & EVALUATION

### 15. Project reporting

Provide information on the reporting schedule, including the type and number of reports (i.e. inception report, progress reports, final report) to be prepared. These reports will provide the basis for systematically monitoring progress and give recipients an opportunity to make substantive comments on any unanticipated issues that require attention. Progress reports should normally be submitted every six months unless an alternative reporting schedule is agreed. See Qn. 15 (q) of the Guidance Note.

Reporting will be managed at two levels:

- At national level each national coordinator will prepare in close collaboration with his technical staff:
  - National inception report
  - Interim national progress reports ( twice/year) monitoring project indicators and measures
  - Final national report
  - A separate report for each national workshop and training activity focusing on the technical aspects

These reports are to be submitted to the regional coordinator.

- At regional level the regional coordinator will prepare:
  - Regional inception report
  - Interim regional progress reports ( twice/year) monitoring project indicators and measures
  - Final regional report
  - A separate report for each regional workshop and training activity focusing on the technical aspects

Before submitting these reports to the STDF secretariat by the implementing agency they will be validated by the ISC. It may be possible that the ISC might consider to modify the project plan and advise on alternatives.

## **16. Monitoring and evaluation, including performance indicators**

Describe how progress made in project implementation will be monitored and evaluated. With reference to the logical framework, provide information on the key indicators (quantified to the extent possible) that will be used to monitor and measure the success of activities carried out. See Qn. 15 (r) of the Guidance Note.

Monitoring and evaluation of the project activities will be done by the implementing agency with the support of the regional coordinator and will be an integral part of each activity report. Progress on the performance indicator will be reported according to the quantified performance indicators as outlined in the logical framework. In addition, the FAO guidelines for evaluation methodology will be followed (FAO, 2011).

In particular, among the performance indicators the key success indicators for points of reference in the monitoring and evaluation of the project will be the followings:

- Technical capacity building
  - Increased knowledge in conducting a TDS in each of the 4 countries
  - Enhanced capacity to run chemical exposure assessments in 4 countries

Measure of success: TDS study conducted in 4 countries ( in 3 out of 4 for the first time ever)

- Food safety risk assessment data generation
  - Household budget surveys data transformed to food consumption data
  - Trade food data included
  - Sampling plans accepted

Measure of success:

- National food consumption data are available in 4 countries
- National Chemical contamination data in food available in 4 countries
- National chemical exposure estimates in selected chemicals available in 4 countries

- Data use by risk managers
  - Risk managers will be sensitized by risk assessors in 4 countries at national meetings

Measure of success:

- A national action plan on how the data will be used by the risk managers with concrete proposals for follow up actions in the area of contaminants of concern

## **17. Dissemination of the projects results**

Describe how the project results will be disseminated within the country and/or more widely. Explain if, and how, the project may be replicated or its results used more widely. See Qn. 15 (s) of the Guidance Note.

Dissemination for project results will be effective mostly through the following activities:

- publication of a database of consumption in each country
- publication of a database of contamination in each country
- publication of dietary exposure estimates in each country
- writing and publishing a final report and as well as scientific articles
- national consultation workshop of all stakeholders and senior food safety decision makers
- one regional stakeholder meeting to disseminate lessons learnt, project results and to plan integration of data into a risk based food safety management approach

In addition, all progress and final reports will be made available electronically to the project partners and all stakeholders. International networks will be involved and associated for results dissemination through internet in other countries notably in sub-Saharan Africa. Some of them are:

- The International Network on Total Diet Studies,
  - The GEMS/Food network
  - The International Network of Pasteur Institutes,
  - The AFROFOODS Network (including Central Africa and West Africa Food Data Systems),
  - The WECARD (West and Central Africa Council for Agricultural Research and Development),
  - The AUF (Agence Universitaire de la Francophonie) and,
  - The national/regional representations of our international partners (Codex, WHO, FAO, OIE, Biodiversity).
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## **ATTACHMENTS**

**Appendix 1:** Logical framework

**Appendix 2:** Work Plan

**Appendix 3:** Project Budget

**Appendix 4:** Letters of support from organizations that support the project request

**Appendix 5:** Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.

**Appendix 6:** Terms of Reference for key staff involved in project implementation

**Appendix 7:** Trade statistics on food commodities from the selected countries and information on export market supporting the selection of foods to be considered in the sampling plan

**Appendix 1:** Logical framework

<b>LOGICAL FRAMEWORK</b>				
	<b>Description</b>	<b>Measurable Indicator / targets</b>	<b>Source of verification</b>	<b>Assumptions &amp; risks</b>
<b>Goal</b>	<b>Strengthened risk-based food control in Sub-Saharan Africa</b>	<b>Implementation of a regional Total Diet Study as a tool to assess food chemical contamination 2. Increase in food control activities undertaken by competent authorities based on identified risks</b>	<b>Progress reports of each countries Monitoring and Evaluation National reports indicating measurable increase in food control activities</b>	<b>The project outputs are indirectly supposed to promote confidence in national food supplies thereby improving international food trade. However, given the complexity and specificity of trade-related issues, the project alone cannot guarantee that trade flow will be enhanced, nor will the impact on trade flow be shown during project duration</b>
<b>Immediate objective (purpose)</b>	<b>Improved understanding on food contamination levels origin in Benin, Cameroon, Mali and Nigeria</b>	<b>Contamination levels of selected pesticides, mycotoxins, heavy metals and veterinary drug residues assessed in at least 80 % of the diet in 4 countries</b>	<b>Project reports National contaminant databases</b>	<b>It is assumed that every partner will respect their engagement as per agreement</b>

Output 1	Strengthened capacity to conduct TDS			
	Description	Measurable Indicator / targets	Source of verification	Assumptions & risks
<b>Activity 1-1</b>	Documentation for planning and sharing of knowledge on currently available data in participating countries and beyond at the commencement of the project.	List of relevant documents for chemical risk assessment and management. Four national datasets allowing the establishment of the national food list (see output 2) .	International project steering committees, to be established to check the quality of each step of the project.	Commitment of data owner.
<b>Activity 1-2</b>	Three days Regional conference on “Implementation of a regional Total Diet Study for a risk-based food control in Sub-Saharan Africa ”	16 technical food safety staff from collaborating Government are briefed and empowered (4 per country) with current information ;Information Sharing and Deliberations on: • Starting Points in each country • Desired status at the end of the Project.	Documented Conference Proceedings	Commitment of food safety regulators, scientists and technical officers
<b>Activity 1-3</b>	One day National stakeholders meeting (1 meeting per country)	48-80 Regulators and Scientists (12-20 per country)	Documented Workshop Proceedings.	Identification of key national players in the field of food safety
<b>Activity 1-4</b>	Two days training for national technicians involved in the collection, preparation, transportation and storage of samples.	In each country, the training will involve 7 sample collectors, 2 lab technicians, 1 PhD student and 1 data manager; preferably a same team will be trained for sampling in each selected region of a country.	Documented Workshop Proceedings.	None identified so far
<b>Activity 1-5</b>	Acquisition of food sampling and preparation tools	Purchased Deep freezers, Refrigerators, Coolers (100, 42 and 20 litres), Gas cylinders with rechargeable butane, Whirl-pak packaging plastic Polyethylene vials (100 ml), food glass bottles Weighing balances (0-3 kg) Cooking Pots, Pressure cooker, kitchen utensils, and blenders. Laptops and digital photo	4 Functional TDS Kitchens 4 Stores for Sampling Consumables	Delay in material delivery

<b>Output 2</b>	<b>TDS food lists are elaborated</b>			
	<b>Description</b>	<b>Measurable Indicator / targets</b>	<b>Source of verification</b>	<b>Assumptions &amp; risks</b>
<b>Activity 2-1</b>	Preparation of food consumption data	Household Budget Survey will be transformed and modelled to obtained consumption data of food “as consumed” per adult equivalent (AE) of the study population.	Progress report	National office of statistics are sharing household budget survey data
<b>Activity 2-2</b>	Elaboration of a food list corresponding to 80-90% of the total diet and determination of the level of pooling of samples	Detailed food list based on national food consumption.	Progress report	Countries not deemed ready to proceed to data collection activities
<b>Activity 2-3</b>	Selection and inclusion of food of trade interest	The national food lists should be completed by food of particular (actual or potential) trade interest for the countries involved.	Trade statistics/Food list	Countries not deemed ready to proceed to data collection activities
<b>Activity 2-4</b>	Elaboration of the final food list	Four final food lists produced including a separated list of food of common interest for participating countries.	Progress report	Countries not deemed ready to proceed to data collection activities

<b>Output 3</b>	<b>Food contamination data are generated</b>			
	<b>Description</b>	<b>Measurable Indicator / targets</b>	<b>Source of verification</b>	<b>Assumptions &amp; risks</b>
<b>Activity 3-1</b>	Preliminary survey on places of purchase and food preparation methods in each country	(i) selection of sampling points in the city of concern, (ii) realization of a recipe book for TDS, (iii) estimation of the amounts of food taking out of the household compared to food eaten in households, and finally elaboration of a catalogue on the main preparation mode of the most consumed foods, and iv) validation of the priority contaminant list per food sample to be analyzed.	4 Documented protocols &SOPS	Countries not deemed ready to proceed to data collection activities
<b>Activity 3-2</b>	Elaboration and international review of a sampling, purchasing and sample preparation plan	Sampling plans & review comments . Instructions for technicians	progress report	Countries not deemed ready to proceed to data collection activities
<b>Activity 3-3</b>	Selection of laboratories	Call for tender	results of the call and selection of laboratories	Unfruitful call for tender
<b>Activity 3-4</b>	Sampling, preparation, storage and transportation of samples to the selected laboratories	Food sampling implemented	Detailed record of food sampled	Incorrect sampling or degradation of some samples
<b>Activity 3-5</b>	Food analysis : laboratory tests	Laboratory tests with high standards implemented	Laboratory tests reports	It assumed that laboratories identified for specific capacity will be selected upon ISO/IEC 17025 accreditation or proven capacity following intercomparison tests with accredited laboratories



<b>Output 4</b>	<b>Risk assessment for harmful food chemicals in each country</b>			
	<b>Description</b>	<b>Measurable Indicator / targets</b>	<b>Source of verification</b>	<b>Assumptions &amp; risks</b>
<b>Activity 4-1</b>	Exposure is assessed for sub-Saharan African countries based on food consumption data and analytical results for food contamination	National/regional reports	National/regional reports completed	None identified so far
<b>Activity 4-2</b>	International workshop on risk characterization	National/regional reports	National/regional reports completed	None identified so far
<b>Output 5</b>	<b>Knowledge shared and stakeholder groups sensitized on the outcome of the TDS</b>			
	<b>Description</b>	<b>Measurable Indicator / targets</b>	<b>Source of verification</b>	<b>Assumptions &amp; risks</b>
<b>Activity 5-1</b>	To establish of a harmonized database	Database available	Database	4 databases will be compiled into one main system
<b>Activity 5-2</b>	Two days National stakeholders meeting (1 meeting per country)	4 national workshops held	4 Progress reports	None identified so far
<b>Activity 5-3</b>	Two days Regional meeting of decision makers in the field of food safety and food trade from the 4 countries	1 regional workshop held	Regional Workshop report	None identified so far

Output 6	TDS outcome translated into risk management, communication and policy			
	Description	Measurable Indicator / targets	Source of verification	Assumptions & risks
<b>Activity 6-1</b>	Assistance to food safety authorities for prioritised chemicals in taking appropriate mitigation measures following TDS results ( <i>specific workshops, in country travels, documents production and dissemination, communications through media</i> ) at pilot scale	Activities suggested by national authorities validated by steering committee prior to producing invoices of all activities	Invoices of validated activities	None identified so far
<b>Activity 6-2</b>	Documentation of good practices for risk analysis in the African context	Good practices documented	Final project report	It is assumed that specificities of the 4 countries will enable to outline replicable specificities depending on identified parameters
<b>Activity 6-3</b>	Monitoring and evaluation	Project followed up from risk assessment to risk management including risk communication	Progress reports	None identified so far

**Appendix 2:** Work Plan

		Year 1				Year 2				Year 3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Output 1</b>	<b>Strengthened capacity to conduct TDS</b>												
<b>Activity 1-1</b>	Documentation for planning and sharing of knowledge on currently available data in participating countries and beyond at the commencement of the project.												
<b>Activity 1-2</b>	Three days Regional conference on “Implementation of a regional Total Diet Study for a risk-based food control in Sub-Saharan Africa ”												
<b>Activity 1-3</b>	One day National stakeholders meeting (1 meeting per country)												
<b>Activity 1-4</b>	Two days training for national technicians involved in the collection, preparation, transportation and storage of samples.												
<b>Activity 1-5</b>	Acquisition of food sampling and preparation tools												
<b>Output 2</b>	<b>TDS food lists are elaborated</b>	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Activity 2-1</b>	Preparation of food consumption data												
<b>Activity 2-2</b>	Elaboration of a food list corresponding to 80-90% of the total diet and determination of the level of pooling of samples												
<b>Activity 2-3</b>	Selection and inclusion of food of trade interest												
<b>Activity 2-4</b>	Elaboration of the final food list												
		Year 1				Year 2				Year 3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Output 3</b>	<b>Food contamination data are generated</b>												
<b>Activity 3-1</b>	Preliminary survey on places of purchase and food preparation methods in each country												
<b>Activity 3-2</b>	Elaboration and international review of a sampling, purchasing and sample preparation plan												
<b>Activity 3-3</b>	Selection of laboratories												
<b>Activity 3-4</b>	Sampling, preparation, storage and transportation of samples to the selected laboratories												
<b>Activity 3-5</b>	Food analysis : laboratory tests												

<b>Output 4</b>	<b>Risk assessments for harmful food chemicals in each country</b>	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Activity 4-1</b>	Exposure is assessed for sub-Saharan African countries based on food consumption data and analytical results for food contamination												
<b>Activity 4-2</b>	International workshop on risk characterization												
		<b>Year 1</b>				<b>Year 2</b>				<b>Year 3</b>			
<b>Output 5</b>	<b>Knowledge shared and stakeholder groups sensitized on the TDS outcome</b>	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Activity 5-1</b>	To establish of a harmonized database												
<b>Activity 5-2</b>	Two days national stakeholders meeting (1 meeting per country)												
<b>Activity 5-3</b>	Two days regional meeting of decision makers in the field of food safety and food trade from the 4 countries												
<b>Output 6</b>	<b>TDS outcome translated into risk management, communication and policy</b>	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
<b>Activity 6-1</b>	Assistance to food safety authorities for prioritised chemicals in taking appropriate mitigation measures following TDS results ( <i>specific workshops, in country travels, documents production and dissemination, communications through media</i> ) at pilot scale												
<b>Activity 6-2</b>	Documentation of good practices for risk analysis in the African context												
<b>Activity 6-3</b>	Monitoring and evaluation												

**Appendix 3:** Project Budget : Please see detailed budget in separate excel file.

**Appendix 4:** Letters of support from organizations which support the project request

**List of letters of support to the regional TDS project:**

In total 33 letters of support to the present project were submitted by national agencies from the four participating countries. (letters of support sent in a separate zip file) In addition, 3 letters of support are provided by FAO and WHO offices (headquarter, regional and national).

**Letters of support submitted by Benin:**

- B\_1: National food safety authority of Benin (ABSSA) under ministry of agriculture, livestock and fisheries)
- B\_2: Central laboratory for food safety under ministry of agriculture, livestock and fisheries
- B\_3: Ministry of public health
- B\_4: National office of statistics
- B\_5: National Codex committee under ministry of Agriculture, livestock and fisheries
- B\_6: Cellule de veille commerciale et d'appui aux usagers des marchés et des frontières à la CCIB

**Letters of support submitted by Cameroon:**

- C\_1: Centre Pasteur of Cameroun
- C\_2: Ministry of agriculture and rural development (MINADER)
- C\_3: Ministry of public health
- C\_4: National institute of statistics
- C\_5: Ministry of energy and water
- C\_6: National Codex committee (CNCOSAC)
- C\_7: Institution for agriculture research and development (IRAD) – two letters, one from Director and one from technical division chief
- C\_8: University of Yaoundé ( department of biochemistry)
- C\_9: Ministry of higher education

**Letters of support submitted by Mali:**

- M\_1: National agency for food safety (ANSSA)
- M\_2: Central veterinary laboratory
- M\_3: Ministry of public health
- M\_4: Ministry of Agriculture
- M\_5: National Codex Committee
- M\_6: Ministry of higher education and research
- M\_7: Institute of education and applied research

**Letters of support submitted by Nigeria:**

- N\_1: National agency for food and drug administration and control (NAFDAC)
- N\_2: Federal Ministry of trade and investment
- N\_3: Consumer protection council
- N\_4: Federal ministry of agriculture and rural development
- N\_5: Institute of public analysis of Nigeria
- N\_6: Nigerian export promotion council
- N\_7: University of Harcourt

- N\_8: University of Agriculture
- N\_9: National bureau of standards
- N\_10: National institute of food science and technology
- N\_11: Federal ministry of health

**Letters of support from International agencies:**

- FAO/WHO headquarters
- FAO sub regional office in Zimbabwe
- WHO national office in Benin

**Appendix 5:** Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.

Please see letter of support from FAO Harare office stating to implement the project and additional letters of support from FAO/WHO headquarters.

**Appendix 6:** Terms of Reference for key staff involved in project implementation

FAO regional office:

- To take lead in the implementation of the project (Supported by FAO HQ and WHO Benin)
- To coordinate and supervise the regional coordinator
- To supervise the production of activity progress reports
- To report the progress of the project to STDF with assistance of regional coordinator
- To manage funds according to project budget plan and coordinate with participating countries disbursements of funds
- To provide expertise along with the international steering committees on matters related to the vision and direction of the project

Regional coordinator (contracted):

- To support the implementing agency
- To work closely with national coordinators and their technical staff to produce the outputs as outlined in the logical framework and in the work plan
- To prepare the regional progress activity reports ( twice a year) , inception and final report.
- To assist in managing the project fund, including transferring the fund from the region to the national partners and preparing the financial report of project
- To provide logistical support, including arranging venue for the training, ticket booking etc for regional events
- To coordinate implementation of the project activities in terms of technical aspects

National coordinator :

- To support the regional coordinator
- To work closely with their technical staff to produce the outputs as outlined in the logical framework and in the work plan
- To prepare the national progress activity reports ( twice a year) , inception and final report.
- To assist in managing the project fund, including transferring the fund among within – country partners and preparing the national financial report of project
- To provide logistical support, including arranging venue for the training, transport arrangements (plane, train or bus) etc for national events
- To coordinate implementation of the project activities in terms of technical aspects

**Appendix 7:** Trade statistics on food commodities from the selected countries and information on export market supporting the selection of foods to be considered in the sampling plan

**Table 1:** Food categories /exporter - Exported value from 2008 until 2011 (Unit : US Dollar thousand)

	Exporters	Exported value in 2008	Exported value in 2009	Exported value in 2010	Exported value in 2011
<b>Cocoa</b>	<i>Africa Aggregation</i>	5,157,338	7,208,386	7,147,039	8,560,305
	Nigeria	601,252	1,429,404	1,283,011	1,011,719
	Cameroon	454,430	619,601	717,789	667,819
	Mali	16		0	107
	Benin	0	3	0	2
<b>Fruits (including nuts)</b>	<i>Africa Aggregation</i>	4,371,559	4,357,030	5,254,579	6,880,910
	Cameroon	83,896	74,645	85,113	278,784
	Benin	37,427	33,397	30,677	172,528
	Nigeria	73,995	87,544	234,188	25,456
	Mali	5,317		16,266	7,402
<b>Nuts</b>	<i>Africa Aggregation</i>	728,441	648,619	998,711	1,729,177
	Nigeria	71,914	87,383	233,706	25,204
	Mali	595	0	1,297	2,447
	Cameroon	46	15	6	114
	Benin	37,117	33,354	30,633	168,932
<b>Coffee</b>	<i>Africa Aggregation</i>	1,603,461	1,350,174	1,736,357	2,143,764
	Cameroon	66,449	52,546	66,847	118,399
	Nigeria	164	0	0	716
	Mali	1		104	11
	Benin				
<b>Fish</b>	<i>Africa Aggregation</i>	3,328,011	3,434,747	3,740,594	3,930,684
	Nigeria	73,255	337,038	324,037	81,286
	Benin	33	153	1,329	1,367
	Mali	130		84	466
	Cameroon	1,351	2,200	2,866	310
<b>Vegetables</b>	<i>Africa Aggregation</i>	2,145,293	2,314,803	2,524,276	3,654,729
	Cameroon	1,786	2,320	2,121	4,549
	Nigeria	1,742	1,148	823	3,341
	Benin	13	13	20	1,047
	Mali	1,256		289	647
<b>Cereals</b>	<i>Africa Aggregation</i>	1,101,882	1,227,308	1,083,458	1,438,884
	Nigeria	699	1	476	3,094
	Benin	11,259	38,104	100,293	1,823
	Mali	2,329		2,551	621
	Cameroon	900	6	1,547	5
<b>Live animals</b>	<i>Africa Aggregation</i>	530,840	773,637	961,474	631,256
	Cameroon	450	363	197	852
	Mali	115,289		70,793	335
	Benin	0	6	0	194
	Nigeria	1,093	165	2	65
<b>Meat</b>	<i>Africa Aggregation</i>	427,954	571,486	680,408	462,909
	Nigeria	16	3	0	550
	Mali	1		0	85
	Benin	0	66,981	93,156	1
	Cameroon	0	353	5	

**Sources :** ITC calculations based on UN COMTRADE statistics (<http://www.intracen.org/exporters/statistics-import-product-country/>).

- Nigeria

Nigeria is a predominantly agricultural country with suitable climate and arable land for production of varieties of agricultural products such as beans, soybeans, cassava, yam, potatoes, palm oil, groundnuts, melon plantain, and rice including livestock. The vast water resources to a large extent support fish production. However because of the large size of its population, about 150 million, majority of the locally produced food is consumed within.

However, Nigeria exports frozen shrimps and sole fillets to European market (81 M\$ in 2013), yams and cassava products (3.3 M\$ in 2013), Cocoa powder and cocoa products (1,011 M\$ in 2013), oil seed, oleagic fruit, grain and other seed (195 M\$ in 2013), fruits such as pineapple, mangoes and nuts (25 M\$ in 2013)

- Mali

Mali exports mainly oil seed and other seed (37 M\$ in 2013), fresh fruits and nuts (7.5 M\$ in 2013), fish and other seafood (0.5 M\$ in 2013), cereals (0.6 M\$ in 2013) and vegetables (0.6 M\$ in 2013). The table below detailed the exports in tons and the destinations for exports from Mali.

<b>Products</b>	<b>Amount (ton)</b>	<b>Destination</b>
<b>Smoked fish, dried</b>	542	ECOWAS
<b>Milk and dairy products, eggs of birds, natural honey</b>	427	ECOWAS, Mauritania, Algeria, Libya, Morocco
<b>Vegetables, roots and tubers</b>	126 188	ECOWAS, EU, Mauritania, Congo, Gabon
<b>edible fruits</b>	62 748	ECOWAS, Mauritania, Gabon, Algeria, Libya, Morocco
<b>tea</b>	360	ECOWAS, Mauritania,,
<b>cereals</b>	11 609	ECOWAS, Mauritania,,
<b>Seeds and oleaginous fruits</b>	11 541	ECOWAS, EU, Mauritania,
<b>Gums and other vegetable saps and extracts</b>	2 086	EU, ECOWAS and Mauritania
<b>Animal fats and oils or vegetable</b>	1 174	ECOWAS, Mauritania
<b>Preparations of cereals</b>	368	ECOWAS, Mauritania
<b>Preparations of vegetables, fruits or other plant parts</b>	435	ECOWAS, Mauritania
<b>Miscellaneous edible preparations</b>	276	ECOWAS, Mauritania
<b>Beverages, spirits and vinegar</b>	4 426	ECOWAS, Mauritania
<b>salt</b>	135	ECOWAS, Mauritania

- Benin

Benin exports mainly fresh fruits and nuts (173 M\$ in 2013), oil seed and other seed (3.3 M\$ in 2013), fish and other seafood (1.4 M\$ in 2013), cereals (1.8 M\$ in 2013) and vegetables (1 M\$ in 2013).

- Cameroon

Cameroon exports mainly cocoa powder and cocoa products (668 M\$ in 2013), fresh fruits and nuts (279 M\$ in 2013) and coffee (118 M\$ in 2013). The table below detailed the exports in tons and the destinations for



exports from Cameroon between 2008 and 2011 at regional and international level and details the exports to Europe, USA and China.

Period	2008		2009		2010		2011	
	Q (tons)	Thousand USD	Q (tons)	Thousand USD	Q (tons)	Thousand USD	Q (tons)	Thousand USD
Fresh bananas	281282	72108	254610	65919	237942	79763	237278	82339
Frozen shrimp	0	0	5	1	0	0	1	2
Arabica coffee	3334	7418	3581	7728	3112	8501	2441	11328
Robusta coffee	29569	50964	32984	39987	44830	56004	28383	55656
Cocoa paste	6510	16005	11544	35693	9613	39012	12859	45593
Cocoa butter	5485	14881	7816	23982	9693	40006	7813	28396
Chocolate and other cocoa based preparations	2906	8720	2232	7765	2905	10101	2966	11560
Pasta	1355	1528	1056	1164	876	792	1201	1282
beans others than grain preparation for soup and broth	3476	4540	3618	4970	2558	3475	3544	5062
Others edible preparations nd*	4591	11762	1881	5185	717	1798	7017	19588
lemonades and orangeades	505	884	1035	1784	511	186	632	168
Beer	2824	1573	2019	1140	1299	749	1311	717
liqueurs	13108	7940	11164	6906	4784	3138	4324	3023
Virgin or refined palm oil	1	1	1	0	3876	4445	5941	7703
sugar	9465	16365	6052	9941	4078	7158	5205	9550
sweets without cocoa	5283	5403	2920	2603	9506	7801	4148	3866
<b>Total exported food</b>	<b>371241</b>	<b>224073</b>	<b>344750</b>	<b>220505</b>	<b>337525</b>	<b>266296</b>	<b>326512</b>	<b>290284</b>
<b>Food exported to Europe , USA, China</b>	<b>2008</b>		<b>2009</b>		<b>2010</b>		<b>2011</b>	
	Q (tons)	Thousand USD	Q (tons)	Thousand USD	Q (tons)	Thousand USD	Q (tons)	Thousand USD
Coffee	89143	148000	71082	102384	59149	85642	38239	55711
Cocoa pasta	26136	44474	20396	25730	26094	43823	21759	57734
Banana	317956	86195	238049	68079	24796	65138	23550	62447
Palm oil	31	28	7797	2876	4	2626	1	-
Fresh and frozen fish	40	53	-	-	9000	-	-	-
<b>Total food exported</b>	<b>433306</b>	<b>278750</b>	<b>337324</b>	<b>199069</b>	<b>342207</b>	<b>197228</b>	<b>295499</b>	<b>175892</b>

nd\*: non designated or included.

**Source:** National Technical Committee of the trade balance, 5 October 2012. Excerpt from results of foreign trade figures, year 2011. www.mincommerce.gov.cm