Caribbean Food and Nutrition Institute

2009

Annual Report

Mission Statement

To cooperate technically with member countries* to strengthen their ability to analyze, manage and prevent the key nutritional problems and to enhance the promotion of good nutrition and healthy lifestyle behaviours.

*The Caribbean Food and Nutrition Institute (CFNI) is a specialized centre of the Pan American Health Organization/World Health organization (PAHO/WHO) serving 18 countries: Anguilla, Antigua & Barbuda, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Christopher-Nevis, Saint Lucia, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago and the Turks & Caicos Islands

Pan American Health Organization
Regional Office of the World Health Organization

CFNI Caribbean Food and Nutrition Institute

To: The Director and Staff of the
Pan American Health Organization and
Member Countries of the
Caribbean Food and Nutrition Institute

I have the honour to submit the Annual Report of the Caribbean Food and Nutrition Institute for the year ending 31 December 2009.

Respectfully yours,

Fitzroy J. Henry
Director, CFNI

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PRESERVING NUTRITION IN CRISES

If the food crisis in 2008 was about soaring prices, the financial crisis of 2009 is about lower purchasing power. When combined, these unleash devastating consequences to poor countries and communities, particularly on nutrition in children. But the Food-Fuel-Finance crises of the last few years were also instructive and compel us to scale up the nutrition capacity to buffer countries against future shocks. The vulnerability of small island developing states is even greater and calls for synergies among health systems, social protection, food security and poverty reduction.

The Caribbean is prone to natural disasters, particularly hurricanes. Between June and November each year the region is threatened by several tropical storms which often bring with them floods and land slides. The region also experiences regular periods of drought and, less frequently, earthquakes. Hurricanes, floods and drought often devastate the crops and the agriculture base of the Caribbean economies. This has a direct effect on domestic food supplies and also foreign exchange earnings which are required to buy food, among other needs.

Hurricanes and floods directly affect food availability but not all sudden-onset disasters produce food shortages severe enough to cause harmful changes in nutritional status. Sudden-onset disasters, however, cause disruption of transportation and communication systems and distortions in social and economic activities. Countries that have food stocks may find them inaccessible due to the disruptions in the distribution system or loss of income with which to buy food.

In the Caribbean, prolonged crises affect the availability and access to food through the erosion of livelihoods resulting from crop failure, depletion of food stocks, market failure, among others. This in turn affects how the limited food is allocated within the family. Breastfeeding and complementary feeding practices are usually maintained during Caribbean crises and young children are given priority at feeding time.

How then can we preserve nutrition with these repeated challenges?

Despite the repeated assaults of hurricanes, drought and floods, the undernutrition rates in the region still show a declining trend. Interestingly, the percentage of overweight children increased. Clearly other factors drive the overweight trend upwards. But why did the underweight population continue to decline despite these repeated shocks? It is contended here that three fundamental and robust programs act as a buffer to these crises.

1. Maternal and Child Health programs that protect the health and wellbeing of women, particularly pregnant and lactating women; family planning; breast feeding and complementary feeding programs, child health and immunization; and iron and food supplementation of mothers and young children.

2. School feeding programs that alleviate short-term hunger in undernourished and well-nourished schoolchildren and avoid micronutrient deficiencies. There are also other benefits. In Jamaica, providing breakfast to primary school students significantly increased attendance and arithmetic scores.

3. Fortified foods are currently available across the Caribbean. With the exception of iron, micronutrient deficiency is low. The Caribbean population is currently being targeted through the fortification of flour with iron and vitamins. The flour products are widely eaten by the adult population and the challenge is to ensure that the iron level is monitored so that standards are adhered to. Another challenge is to ensure that suitable fortified flour products are eaten widely by young children as well. There is much scope to encourage this in promoting improved young child feeding practices.

A good way to preserve nutrition in crises is to strengthen nutrition infrastructure and programs in non-crisis times. CFNI therefore firmly advocates 6 lines of programmatic action:

1. Support the establishment of national food and nutritional goals so that the sub-region's agriculture and food systems can deliver adequate and nutritionally appropriate quantities of food, especially to low-income and vulnerable groups. To achieve this requires:

   - The recognition by the health sector that prevention strategies have to be a collaboration with partners from many sectors (multi-sectoral);

   - A recognition at the national level that the food and agriculture sector is one of the crucial partners in any policy aimed at addressing the region's main public health problem;

2. Support multi-sectoral interventions that would:

   (a) reduce diets high in fats and sugars in total energy intake and increase intakes of fruits and vegetables in diets;

   (b) reduce relative food energy from animal sources;

   (c) monitor food imports relative to health goals; and

   (d) develop a food-price policy that takes into account all components of food security.

3. Assist in the process of galvanizing official (political) support for, and facilitate the passage through to Cabinets, of National Food Policies, National Plans of Action for Food and Nutrition Security and multi-sectoral coordinating mechanisms.

4. Explore the development of appropriate incentives that encourage the production and consumption of regionally produced foods, particularly fruits and vegetables. These actions must be supported by national food-based dietary guidelines with adequately-funded promotion strategies.

5. Support for the establishment of formal planning linkages between the agriculture sector and other sectors (especially, health, tourism, trade and planning) in order to ensure a more integrated and coordinated approach to policy and program development.

6. The development of a regional Food Security Strategy to address emerging food security issues, the prevention and control of NCDs, and the monitoring and evaluation of the 2007 Heads of Government and Caribbean Agriculture Ministers' Declarations.

Most of these actions are highlighted in this annual report. The support of national and regional partners is gratefully acknowledged.

Dr. Fitzroy Henry
Director, CFNI

PART 1
TECHNICAL COOPERATION - REGIONAL

What We Do

Working with 17 Caribbean countries

PLANNING AND POLICY FORMULATION

National Plans of Action on Nutrition

In 2009, CFNI continued to assist countries in reviewing their existing Food and Nutrition Policy and Plans of Action for Nutrition documents. CFNI submitted the draft Food and Nutrition Policy and Plan of Action to the Permanent Secretary, Ministry of Health, ***Antigua*** for a country review and update. The review was done and further assistance was requested for the revision of the document. For ***Dominica***, the draft policy document was submitted to the Permanent Secretary and the Chairperson of the Dominica Food and Nutrition Council for an in-country review. CFNI will later draft the final revision of the document for submission to Cabinet. This is expected to occur in 2010. ***Belize*** was assisted with the revision of their Food and Nutrition Policy and Plan of Action. The review was used as part of the continued training of the members of the National Food and Nutrition Security Commission. A first draft was submitted to the Chairman of the Commission to be used in a National Workshop to address the CFNI comments and missing data.

The policy for ***Trinidad and Tobago*** is still in a first draft stage. The information now needs updating and plans were made to have multisectoral meetings to complete the second draft. The Ministry of Agriculture, ***Jamaica*** requested assistance from CFNI to develop a National Food and Nutrition Security Policy. One meeting was held and a draft concept paper entitled: "Towards a Food and Nutrition Security Policy for Jamaica" was prepared and submitted.

The ***Bahamas*** is expected to reschedule the National Consultation for the finalization of the policy and plan of action soon. The ***Turks and Caicos Islands*** and ***Anguilla*** are still awaiting ratification of their revised policies by Cabinet. When this is completed further assistance would be given to enhance the members of the Council for effective co-ordination of the Plan. A request was made by ***Anguilla*** for CFNI to conduct the training of the Council members in early 2010.

CFNI also continued to support the multisectoral approach to planning and implementation by enhancing capacities of the members of the existing and new national Food and Nutrition Councils. Training was conducted with the Councils in ***Montserrat*** and ***Belize.***

In ***Montserrat***, training of the members of the National Food and Nutrition Council was done during the period 28 – 30 July 2009 following the official launch of the Council.

Twelve persons participated. At the end of the session the following outputs were achieved:

- A strengthened National Food and Nutrition Council
- A first draft Food and Nutrition Security Bulletin
- First draft of the Strategic/Operational Plan for the Council.

These training sessions will continue in 2010 with the completion of the first Food and Nutrition Security Bulletin and the finalization of the Operational Plan for the Council.

Dr Ballayram, CFNI, presenting at the Training Workshop on Food and Nutrition Policy, in Montserrat.

The training of the Food and Nutrition Security Commission members in Belize was conducted during the revision of the Belize National Food and Nutrition Policy document, 9-12 November 2009. Approximately 30 persons participated in the three days of training. At the end of the session the following outputs were achieved:

- A strengthened National Food and Nutrition Security Commission.
- Updated information for the collation of the National Food and Nutrition Policy and Plan of Action.

Training will also commence in ***Anguilla, Dominica*** and possibly the ***Bahamas*** when they are ready. CFNI is still awaiting feedback from the ***British Virgin Islands*** for continued training of the Food and Nutrition Council members.

Status of Food and Nutrition Policies and Councils In Member Countries - 2009

Country	Status of Food and Nutrition Policy	Status of Food and Nutrition Council/Commission/Committee
Anguilla	Policy with the Ministry of Health since 2008	Policy not taken to Cabinet so no formal Council yet. Expected to be done soon. Request made for training of the Council in early 2010.
Antigua and Barbuda	Document submitted to the Permanent Secretary, Ministry of Health	No formal Council yet. Once the policy is completed and ratified by Cabinet, training of the Council members will commence.
Bahamas	Document with the Ministry of Health since 2008	Policy not taken to Cabinet so no formal Council yet. National Consultation to be done.
Barbados	No request made	No Council exists.
Belize	Awaiting dates for training. Policy also needs reviewing	Council present and functioning.
British Virgin Islands	Policy ratified by Cabinet since 2007	Council ratified but not functioning. The names of the Council members have not been submitted to CFNI. There exists a Chronic Diseases Committee which may be expected to take up the functions of the Council. The makeup of the Committee may need to be revised to ensure it is multidisciplinary and not solely Health.
Cayman Islands	No request made	No Council exists.
Dominica	The Policy is in draft form	Council present and functioning.
Grenada	CFNI submitted the final draft in 2007	The Grenada Food and Nutrition Council continues to operate in the same format.
Guyana	No request made	No Council exists.
Jamaica	Policy to be written. Concept paper drafted	No Council exists.
Montserrat	Policy accepted by Cabinet/ Executive Council.	Council present and functioning.

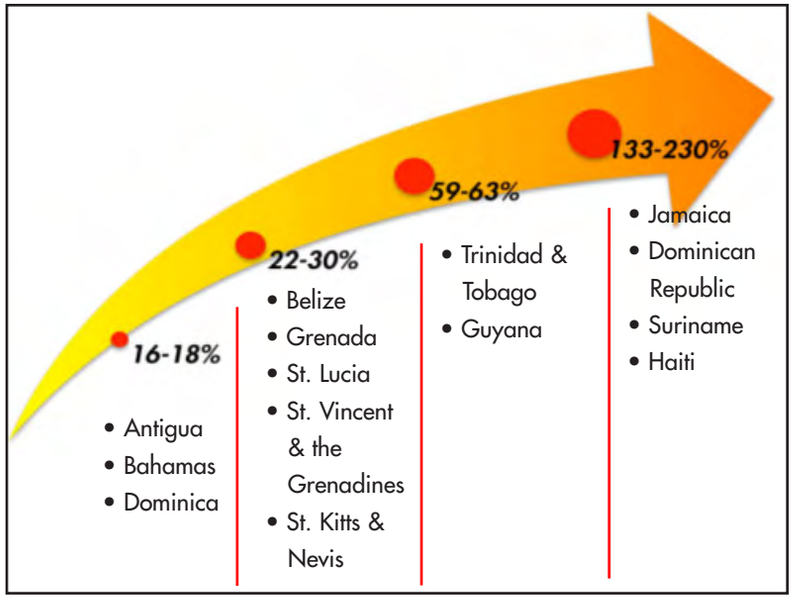
Country	Status of Food and Nutrition Policy	Status of Food and Nutrition Council/Commission/Committee
St. Kitts and Nevis	Policy submitted since 2004. No response from country to date	No Council to date.
St. Lucia	No request made	No Council exists.
St. Vincent and the Grenadines	Policy accepted a few years ago	Council present and functioning.
Suriname	No request made	No Council exists.
Trinidad and Tobago	Draft completed but will be used as a working document for a multi-sectoral team to review	No Council exists.
Turks and Caicos Islands	Policy with the Ministry of Health	No Council exists. Policy not sent to Cabinet as yet.

Food and Nutrition Security

CFNI's mandate is to enhance the quality of life of the people in the Caribbean through the promotion of good nutrition and healthy lifestyle behaviors. As an integral part of this mandate, the Institute continues to advance the food and nutrition security and poverty alleviation agenda in member countries through advocacy, technical cooperation, and program implementation. As in previous years, this agenda was particularly relevant in 2009, especially in light of several critical food and nutrition issues that continue to attract the attention and response of the Institute.

In particular, increasing world commodity prices, contributed to high domestic food and non-food prices, thereby constraining the ability of the population, especially the poor and vulnerable groups, to purchase food and basic non-food items. The household level consequences of these high prices are most acutely felt in low income households. For food importing countries it is estimated that a 50% rise in staple food prices causes a 21% increase in total food expenditure, increasing these from 50 to 60% of income, compared to high income countries where this rise in prices causes a 6% rise in retail food expenditure with income expenditure on food rising from 10 to 11%. These world price changes have impacted with varying degrees on Caribbean economies. Since 2000, the Consumer Price Index (CPI) has increased by 16-18% *(Antigua, Bahamas, Dominica)*, 22-30% *(Belize, Grenada, St. Lucia, St. Vincent and the Grenadines, St. Kitts and Nevis)*, 59-63% *(Trinidad and Tobago, Guyana)* and 133-230% *(Jamaica, Dominican Republic, Suriname,* and *Haiti)*. These rising prices (which reduce the ratio of wages to prices), constrain the ability of the population, especially the poor and vulnerable groups, to purchase food and basic non-food items. Estimates from

Consumer Price Index 2000 - 2009



CFNI's nutrient cost analysis[1] demonstrate that for most countries studied, rising food prices are reversing gains made in the past in the ability of the minimum wage to purchase a minimum cost balanced diet.

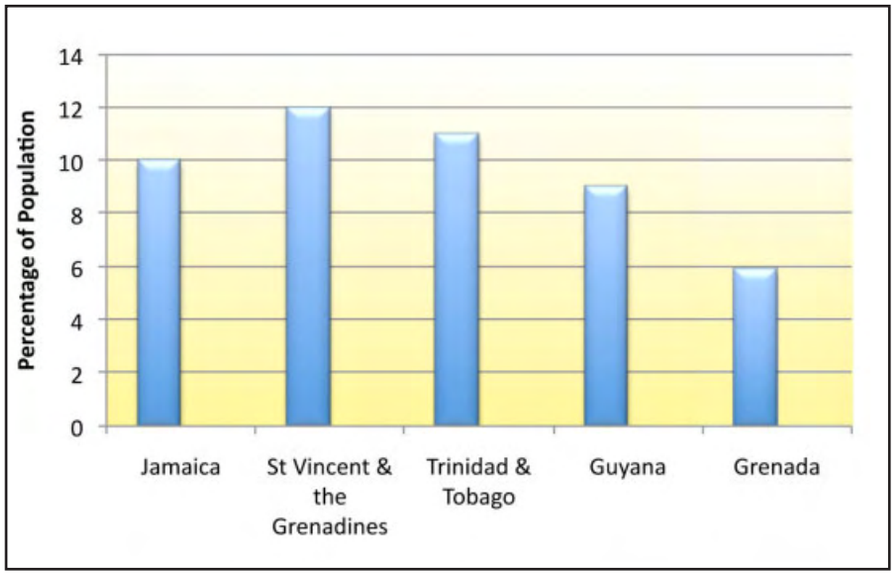
Although international prices for some food and non-food commodities have been declining since the end of 2008 they have not fallen to the pre-2005-06 levels. More important, however, domestic retail prices continue to increase. Further, the international financial crisis and the world economic recession that followed closely on the heels of the rapid food-price inflation have transmitted additional burdens to regional economies, thereby compounding the negative effects of the rapid food-price inflation on households. Moreover, despite some progress over the years, poverty and inequalities in income exist at unacceptable levels in the region. In CARICOM (excluding *Haiti*) it is estimated that about 600,000 persons are under-fed or hungry every day. The estimate for ***Jamaica*** is 255,700 persons (10% of the population), ***St. Vincent and the Grenadines*** 14,200 persons (12% of the population), ***Trinidad and Tobago*** 145,200 (11% of the population), ***Guyana*** 69,300 (9% of the population), and ***Grenada*** 7,000 (5.9% of the population). One of the main reasons for this is poverty, which ranges between 8-33% in the region. In addition, income inequality in the region is among the most unequal in the world, and this is also expressed in inequality in consumption, where for some countries (e.g., ***Jamaica***) the lowest 10% of the population consumes 12 times less than the top 10% of the population (CFNI/FAO, 2008).

Finally, non-communicable chronic diseases (NCDs), viz., diabetes, high blood pressure, heart diseases, stroke and some types of cancer, continue to be the region's main public health problems and account for the largest proportion of mortality and morbidity. These NCDs affect persons irrespective of their age, socio-economic status and where they live. Sedentary lifestyles (i.e., low physical activity), and poor nutrition through inappropriate diets contribute to overweight and obesity, which are main risk factors for these diseases.

Against this background, the Institute has provided strong leadership and advocacy roles in the region in advancing public policy to address the region's critical food and nutrition problems. Initiatives in 2009 include:

- Reviewed/strengthened food policies and national plans of action on nutrition in 9 countries.
- Continued advocacy for the inclusion of nutrition and health on the agriculture policy agenda.
- Continued close work with member countries to develop public policies to address chronic non-communicable diseases and co-morbidities (overweight/obesity) through good nutrition and healthy lifestyle behaviors.
- Encouraged and worked closely with countries to define their food and nutritional goals so that their

Underfed/Hungry persons in CARICOM



[1] Nutrient cost analysis specifies the minimum cost of obtaining a nutritious basket of commodities for a family of given size. The basket of commodities reflects foods that are usually available in local markets and cultural preferences.

agriculture and food systems could deliver adequate and nutritionally appropriate quantities of food, especially to low-income and vulnerable groups.

- Advocated for a structured food import replacement program and a re-orientation of food imports and the food distribution system, to increase the availability of good quality-nutritious foods in member countries.

- Conducted and disseminated nutrient cost analyses for 8 member countries.

- As an integral part of its poverty alleviation agenda, the Institute sourced funds and implemented its Small Grants Program in ***St. Kitts and Nevis***. These small grants provided an opportunity for displaced sugar workers and other community-based groups to design and implement sustainable small projects to enhance food and nutrition security and reduce poverty. Six community-based groups in the twin-island state benefited from grants totaling $120,000. The grants were given to projects that: (i) engaged in production activities for home-consumption and income generation; (ii) strengthened existing productive initiatives and improved productivity and competitiveness; and (iii) implemented technologies appropriate for the production and processing of food.

Food Safety

During 2009, CFNI expanded its technical cooperation to work with member countries to strengthen their national plans of action on matters related to food and nutrition. Specifically, the Institute, taking into account the strides made by its involvement with countries over the past few years to strengthen their respective Food Policy and Plan of Action, embarked on focusing on the formulation of a National Food Safety Policy and Plan of Action. The pilot work was done with ***Grenada*** after CFNI initiated discussion with the PAHO Representation of the Eastern Caribbean Countries to lend support to this island state for formulating the policy. The principal focus was on addressing policy issues on food safety exclusively. While acknowledging that food security, food safety and food quality issues are often dealt with in tandem to each other, food safety, as defined by the Codex Alimentarius, is the "assurance that food will not cause harm to the consumer whether it is prepared or eaten according to its intended use". The challenge was to have experts at CFNI working in collaboration with CAREC and joining forces with national experts in ***Grenada*** to develop the national food safety policy framework.

The objectives were to (a) apply food safety principles and practices throughout the food and produce industry; (b) consider the role of key players in the management and implementation of food safety; and (c) identify monitoring mechanisms to ensure compliance. The combined team examined and reviewed documents essential to the formulation of the proposed National Food Safety Policy, using as the elements deemed most essential to the design and development of the policy document, three levels of systems, namely:

- How the organizations, groups and individuals that are involved in food safety and quality operate in ***Grenada***. In this context, discussions were held on existing policies, legislation and relationships among critical stakeholders on the farm to table continuum.

- The existing resources, information, procedures and protocols, structures, decision-making processes, and overall infrastructure in government agencies, the food inspectorate in general, food industries, food laboratories and consumer interests.

- The knowledge, skills, competencies, work ethics of food inspectors, producers, processors, manufacturers, distributors and the consumers.

A draft policy was prepared for ***Grenada*** and is now receiving the attention of the national authorities. CFNI intends to continue this work with other Caribbean member countries building on the success that has been dependent upon the ability to use a multisectoral approach incorporating the main stages of the food supply chain by giving consideration to agricultural inputs (pesticides, fertilizers, animal feeds, veterinary drugs and antibiotics, etc.); primary production (farmers, growers, fisherfolks, etc.); primary food processing operations (abattoirs, dairies,

grain mills, etc.); secondary food processing operations (freezing, drying, food preservation, canning, etc.); food distribution for import, export and domestic consumption; food retailing (grocers, supermarkets, etc.); food catering (street food vending, restaurants, workplace and school environment, nursing homes, etc.); and preparation of foods within households.

Institutional Dietetics

As countries continued to engage in planning to define and address their health problems, the contribution of nutrition in the control and management of the chronic diseases epidemic and to the overall health and well being of persons utilizing public institutions remained an area of national and regional concern. In 2009, ten countries: ***Anguilla, Antigua and Barbuda, Barbados, Belize, British Virgin Islands, Guyana, Jamaica, Montserrat, St. Vincent and the Grenadines,*** and ***Trinidad and Tobago*** requested technical cooperation from CFNI to support improvements in various aspects of their institutional dietetics services. The technical support requested by these countries related to three main areas:

1. development and or revision of institutional norms/standards for the improvement of dietetic services and nutrition programs;
2. assessments of dietetic services in public institutions in CFNI member countries; and
3. strengthening of the delivery of dietetic services in public institutions.

At end of 2009, CFNI supported it member countries in developing several sub-regional institutional standards for improving planning and delivery of dietetic services. The sub-regional standards initiated included: establishing nutrient and meal standards; standardization of menu (to meet health needs); reporting dietetics services; training of foodservice workers for health related institutions; standards of care for selected clinical dietetic services in primary and secondary care; standards for administrative dietetic services in primary and secondary care; and improving quality of care through centralized meal service. Additionally, evaluation was planned and conducted on the institutional dietetics services, specifically related to school meals in ***Trinidad and Tobago*** and ***Montserrat***. Additional information of these activities are provided in the surveillance and research section of this report. Several activities that contributed to the strengthening of dietetic services in public institutions were undertaken in ***Anguilla, Antigua, Barbados, Dominica, Guyana, Montserrat, Jamaica, St Vincent and the Grenadines, Trinidad and Tobago***. These related specifically to:

1. Recommendation for nutrient analysis software for the development of production standards (menus and recipes) for both ***Anguilla*** and ***Montserrat***.
2. Initiation of data collection towards the development and implementation of a of a structured dietary reporting system in ***Guyana*** and ***Montserrat***.
3. Analysis of data to develop nutrient and meal standards for selected institutions in ***Anguilla, Antigua*** and ***Montserrat***.
4. Revision of and preparation of menus to meet nutrient standards in ***Anguilla, Antigua*** and ***Montserrat***.
5. Training of foodservice supervisors and other key personnel in ***Barbados, Trinidad and Tobago*** and ***Guyana***.
6. Preparation of a framework for incremental training of food service staff and exploration of foodservice supervisors training in ***Montserrat*** and ***Barbados***.
7. Preparation and initial review of the menus in keeping with nutrient and meal standards.
8. Development and testing of nutrition screening tool and standards of care in ***Montserrat*** and ***Jamaica***.
9. Consultations on dietetics services in ***St Vincent and the Grenadines, Barbados*** and ***Trinidad and Tobago***.

10. Definitions of the roles and functions of nutrition officers and dietitians for Dominica.

Development of Sub-Regional Standards

Over the last decade of interaction between CFNI and its member countries, primary components of institutional dietetic services have been identified that must be provided in order to foster and support optimal health in the users of these facilities. During that period, the dietetics services provided by key institutions in several countries were assessed to determine the extent to which these core components of dietetics services were adequately provided. These assessments indicated a lack of appropriate standards which continued to impede the effectiveness and efficiency of the delivery of dietetics services. These data have shown that there is still a need for evidence-based dietetics services in the Caribbean region. Since then, many countries under CFNI technical guidance have embarked on a process of seeking to structure, and deliver dietetic services in a systematic, scientific and cost effective way that meet the needs of their population.

Data supplied to or generated by the dietary departments are potentially powerful sources of information to improve both the targeting and planning at national and institutional levels as well as the daily delivery of these services. It can also provide useful insight in the need for and allocation of resources to dietetic services. Accordingly, efforts have been initiated to assist countries in identifying key indicators to monitor, develop or strengthen the system. The system will collect, analyze, interpret and use appropriate dietetics data to establish appropriate/relevant norms and standards for effective and efficient delivery of dietetics services. This activity includes the use of two main sets of data:

- Needs oriented data – these provide information by manipulating data related to the nutritional status of the clientele/patients or inmates.

- Service oriented data – these provide information on the service delivered and resources required by the department based on the types and quantities of meals and diets requested.

Needs Oriented Data

Needs oriented data were used to ascertain the nutritional requirements of the population, estimate nutrient requirements and establish nutrient and meal standards. Datasets inclusive of the nutritional assessment criteria, that is, age, gender, body size, medical condition and mobility form the basis for generating the needs oriented data. Three countries, ***Anguilla, Antigua*** and ***Montserrat*** engaged in the collection of these data in 2009 and submitted the data to CFNI where it is being analyzed to generate nutrient standards. The nutrient standards will then be used to develop culturally appropriate meal standards inclusive of menus and standardized recipes. One country, ***Guyana***, is in the process of strengthening its system in four hospitals in four regions to capture these data.

In most hospitals and other related institutions. The data collected are used to establish general kilocaloric standards that are applied across the board. As more specificity is required based on the diversity of diet orders, additional data will be collected specific to patients with these conditions. ***Montserrat*** expanded their dataset to include persons with hypertension and or diabetes. ***Montserrat*** is far advanced in the preparation of a technical document on the development of their nutrient standards and the supporting elements to establish meal standards for their dietetic department.

Nutrient standards are the primary outcome of collecting and analyzing needs oriented data. The document being prepared by ***Montserrat*** is being used to guide the development of sub regional standard on the process used to develop nutrient standards for health related institutions.

Service Oriented Data

The types and quantity of meals ordered from the dietary departments or school canteens are a direct reflection of the technical expertise required and general workload of the department. These data

have direct implications for the level and number of technical to non-technical persons as well as the level of expertise and training required to deliver these outputs (number and types of meals). Diet and meal census data are fundamental to the understanding of service oriented data. They must be collated and interpreted in relation to food items and recipes so that when constituted will provide the appropriate mix of nutrients in the meals provided to the recipient. This is the only concept of a balanced diet that can be measured during this process.

Overall production data are important aspects of service-oriented data based on the total numbers of meals required; the food and time resources used to produce these meals must be monitored to optimize the forecasting and management of the resources by the dietary department. Additional aspects related to service are productivity indicators such as labour hours, number of meals produced per staff, meal cost per patient/client, per diet and per day.

Reporting Dietary Services

Ongoing monitoring of service data provides the basis for dietary reports that are needed at managerial and governmental levels to guide planning for and evaluation of dietary services. Very few Caribbean countries collect, collate and generate reports of their dietetic services with a quantitative component that can be used as quick references to the services provided and their impact on the population served. Through discussions with ***Guyana*** and ***Montserrat*** a structured reporting format has been devised. This addresses the core aspects of dietetic services and is being refined and introduced for testing in these two countries. Systematic retraining was initiated in ***Guyana*** with foodservice supervisors from four regional hospitals to facilitate the generation and collection of relevant data to prepare periodic dietary report. Through this process useful quantitative and qualitative data on dietetic services will be provided to management, to serve as evidence for the allocation of resources and the development of core norms and standards.

Menu Standardization

The menu is the nucleus of the dietetic department. It serves as a backbone or foundation against which diet prescriptions are rapidly converted to meals. It allows for forward planning and acquisition of supplies, utensils and equipment to be used in the production of meals as well as the expertise of the personnel required to produce these meals. Menus for the hospitals in ***Anguilla*** and ***Montserrat*** and the senior citizen home in ***Antigua*** were submitted for review to determine if there are appropriate to meet the meals and nutrient standards in these institutions. These menus must be nutritionally adequate and also culturally appropriate. Therefore standard recipes are being generated for each of the menu items. Two countries, ***Montserrat*** and ***Anguilla***, have sought and received advice on appropriate software to analyze these recipes for appropriate nutrient content in keeping with the established nutrient standards based on the reference nutritional profile of their populations.

Training of Dietary Staff

All members of staff working in institutional dietetic services such as hospitals, school feeding programs, day care facilities, nursing homes and prisons should be appropriately trained in basic principles required to provide nutritionally adequate meals that are wholesome and aesthetically appealing to the client. Upward mobility from entry level to positions of supervision requires that these persons take on additional responsibility and more technical aspects of the services. The need has been recognized for persons employed to these services to receive appropriate basic training at entry level address health implications of the meals being in order to support the preparation and service of the meals. Additionally, incremental training in relevant principles of nutrition and dietetics is needed as persons advance/or are promoted to foodservice supervisor. This training is necessary to ensure adequate performance of additional functions in selected aspects of meal production and service in keeping with the health needs of the population group being served.

Currently there are no universally accepted competencies with subsequent training programs to equip persons at the entry or advance levels for foodservice operation in health-related institutions. While there are many hospitality-related training, there is a dearth of training in institutional dietetic services that address the application of foodservice subsystems to the health status of the target population. Therefore persons that are employed as foodservice workers and cooks to the health-related foodservice operations are unable adequately apply nutrient and meal standards to their duties. Similarly, they do not use standard operation procedures in the performance of their duties in the various foodservice subsystems. Hence, many of these institutions are unable to deliver and monitor the appropriateness of nutrition and dietetic services to ensure cost effectiveness.

Both ***Barbados*** and ***Montserrat*** initiated discussions in 2009 to implement structured training programs to address these issues. ***Barbados*** is focusing on a formal foodservice supervisors' course that can be upgraded over time to a technical or professional course in dietetics. ***Montserrat*** explored the introduction of a structured accredited in-service type training program. A training plan was drafted for the dietetic staff for finalization and implementation in 2010 in ***Montserrat***. The training plan will be used to prepare in-service training manuals on core standards and procedures for implementation of meal standards – production and procurement.

Preparation of Standards of Care and Guidelines for Administrative and Clinical Dietetics Services

Two countries, ***Barbados*** and ***Jamaica***, embarked on the documentation of standards and or guidelines towards the standardization of both administrative and clinical dietetics services. The National Nutrition Centre in the Ministry of Health in ***Barbados*** prepared a draft document entitled "Nutritious and Healthy Foods in Schools: Nutritional and Practical Guidelines for Barbados". CFNI provided technical input and reviewed this document.

Since the ending of 2008, the Nutrition Unit of the Ministry of Health has initiated the development of administrative and clinical dietetics standards for primary and secondary care with the support of CFNI. These standards were reviewed in 2009 and a methodology prepared to test, finalize and disseminate these standards. The aim is that there will be national implementation of these standards in 2010. It is also hoped that the standards of care developed in ***Jamaica*** will be disseminated to the other member countries. In addition plans are in place to involve technical persons from other countries in the development of standards that may not have been addressed in ***Jamaica***.

In ***Montserrat***, a nutrition screening toolkit was developed and testing initiated.

Assessment of Dietetic Services in Public Institutions

Assessment of aspects of dietetic services was conducted in schools in two countries: ***Montserrat*** and ***Trinidad and Tobago***. The research methodology and findings used are detailed under the surveillance and research section of the report.

Discussions continued with ***Grenada*** and the ***British Virgin Islands*** regarding the evaluation of their school feeding program. Although much preparatory work was done with these countries, the evaluation was not conducted for varying reasons.

A three-day workshop was held in ***St Vincent and the Grenadines*** to present and discuss findings and recommendations of the evaluation of the National Supplemental Feeding Program/Nutrition Support Program. On one day, the workshop focused on the component of the assessment of the findings related to the preschool population, the second day focused on health care workers and the third day focused on primary schools. Several working groups reviewed the findings and recommendations by CFNI and identified the way forward for each group. It was agreed that these recommendations would be compiled by a technical team in country and submitted to the responsible governmental agencies.

Up to the end of 2009, work was still ongoing on the compilation of these recommendations.

Strengthening of Dietetic Services in Public Institutions

Technical cooperation was provided to several countries towards strengthening of their institutional dietetic services. This was provided mainly in the form of training sessions conducted in ***Barbados*** and ***Guyana***; preparation of Terms of Reference for implementing nutritional standards in ***Jamaica***; and preliminary assessment of a regional hospital in ***Trinidad and Tobago***.

In ***Barbados***, a 2-day in-service training workshop for foodservice supervisors, assistants and other core staff was held to equip the relevant staff to interpret diet prescription and produce diets for selected situations. The focus of this training was on nutrition for the elderly with special emphasis on diets for hypertension, diabetes, renal, high protein, and 'no wheat' being prescribed by physicians. At the end of the training several recommendations were made for improving the services in these homes and discussions were held between senior dietitians responsible for these services in primary care in ***Barbados*** and CFNI on how these could be implemented.

In addition to training conducted with the foodservice supervisors on collecting and compiling relevant dietetics data, another training of staff was held with over 20 participants from a range of private and public institutions to discuss the importance of the data to nutritional standards and the core standards necessary for the improvement of the services. Many participants expressed an interest in participating with the main project hospitals in improving systems to strengthen the contribution of dietetics services to the overall quality of care provided to the users of their institutions.

Jamaica continued to work towards implementation of nutritional standards in Early Childhood Institutions, to this end a Terms of Reference was developed and submitted for funding to support national implementation of these standards

There was a preliminary exploratory visit to conduct expert analysis of the foodservice facility in San Fernando Hospital in ***Trinidad and Tobago*** in order to analyze the efficiency and effectiveness of the current meal service system. The department is exploring a proposed change from a decentralized system toward the introduction of centralized meal services. Discussions were initiated on the proposed layout, design and operations procedure for centralization of meal services and a list of required equipment generated. In order to implement centralized meal services it was evident that the hospital needed to ensure the implementation of appropriate operational standards and procedures. This would also have implications for reassignment and training of staff to implement this improved meal distribution system. There was a subsequent visit to sensitize senior management in the hospital to the advantages and implications of these changes. The team in San Fernando Hospital in ***Trinidad and Tobago*** expressed their support to improving these services in 2010.

SURVEILLANCE/RESEARCH

SURVEILLANCE

Training in Food-Borne Disease Surveillance

CFNI collaborated with two other PAHO Centres – Caribbean Epidemiology Center (CAREC) and the Pan American Center for Foot-and-Mouth Disease (PANAFTOSA) to assist in capacity building for food-borne disease surveillance in the Caribbean sub-region. It was important for CFNI to join in this partnership as the fight against food-borne diseases involves several aspects of food safety. CFNI remains conscious about the inter-relatedness between safe, nutritious and healthy food and its availability to the consuming public, and recognizes that food losses arising from condemnations or disposal of diseased, unsafe food automatically raise the potential for reduction in the availability of food to the consuming public. Consequently, through a strong surveillance network that embraces several aspects of the food chain, it is potentially more beneficial to know the individual status of the various foods and food groups and to plan more effectively to address any gaps. The institute was therefore pleased to align itself to assist in facilitating at the Integrated Foodborne Disease Surveillance (WHO GFN, formerly Global Salmonella Surveillance) Workshop and the Burden of Illness Workshop held in ***Barbados*** in November 2009. Interestingly, the workshop participants from ***Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, Suriname, Trinidad and Tobago*** and ***Turks and Caicos Islands*** all endorsed the five pillars of a food safety system as enunciated by WHO to include (a) development of food control programs, (b) laws and regulations, (c) inspection services, (d) food-borne disease surveillance and (e) social education and communication. All countries developed draft Action Plans that are to be approved by the National Authorities and be used to strengthen their national food-borne disease surveillance programs.

Training in Survey Methods – 24-hour Dietary Recall

As part of CFNI's World Diabetes Foundation (WDF) supported project in schools in the region, the Institute planned and conducted the collection of 24-hour recall data from school-children in Form 2 of project schools in the relevant countries. This data collection forms part of the baseline data which will be used in evaluating the impact of this intervention on children's eating behaviours.

A sample of children from each project school was selected, instruments and training manual developed and a detailed schedule for data collection developed for ***Grenada, Trinidad and Tobago, St. Kitts and Nevis*** and ***St. Vincent and the Grenadines.***

Nutrition and other personnel were trained in the collection of 24-hour recall data over a 3-day period and this training involved training in general interviewing techniques, training in collecting food recall data, and practical exercises in collecting data from the target age group. The training also involved the production of food models that would be used in the interviews.

Data collection was done over a 3-week period in the schools.

Training in Data Entry, Analysis and Reporting in Nutrition

As part of the Institute's ongoing initiatives to build capacity in the management and analysis of food and nutrition surveillance data CFNI in collaboration with the PAHO ECC office planned and facilitated basic and advanced training in the use of Epi Info for data entry, analysis and reporting.

The basic training was conducted in ***Grenada*** and ***St. Kitts and Nevis.*** In Grenada training was conducted for approximately 20 public health professionals including environmental health officers, nurse surveillance officers, laboratory technologists, and a pharmacist, in addition to staff of the Grenada Food and Nutrition Council. The training was aimed at helping participants to apply skills to their work situation and therefore participants built databases for data that they collect routinely at work.

Training in ***St. Kitts*** was conducted primarily for data management staff of the Ministry of Health of ***St. Kitts and Nevis***, 10 of whom were trained. In addition two staff members from the Ministries of Health and Education in ***Montserrat*** also participated. The contents of this course was adapted based on the experience gained in ***Grenada*** and was re-structured to include some basic Statistics and Epidemiology, in order that participants could better understand the application of certain features of Epi Info and the output generated by the program.

As a follow up to the in-country training a regional training course was held in ***Barbados*** in December that was aimed more specifically at capacity building in data management and analysis relating to the food and nutrition situation. Some 10 persons participated from ***Barbados, Grenada, Montserrat, Dominica, Antigua, St. Lucia,*** and ***St Vincent and the Grenadines.*** The workshop also aimed to impart skills to other health workers, many of whom professionally support national nutrition officers such as epidemiologists.

EVALUATION RESEARCH

Evaluation of School Lunch Program in Montserrat

The Director of Education and the Nutrition Officer in ***Montserrat*** requested the assistance of CFNI in the planning for a breakfast program in ***Montserrat.*** As part of this planning process it was agreed that the Institute in collaboration with the Ministries of Education and Health would conduct an evaluation of the existing lunch program and in so doing ascertain the feasibility of a breakfast program for students. The objectives for the evaluation were:

1. To identify and describe the existing meal options that are available to students on a school meals program in ***Montserrat***.
2. To determine the perception of participants towards meal options.
3. To determine the perception of officials from the Ministry of Education (education officer, principal, teachers) and parents towards meal options.
4. To assess the quality and nutrient content of sample meals.
5. To examine operations management with respect to cost effectiveness.
6. To examine aspects of the operations including: facilities, production, procurement, food safety, monitoring and control, adherence to standards.
7. To determine the cost effectiveness of meal options and operations.
8. To identify resources, policy/program changes necessary for the improvement of meal options.

All students attending Government schools were selected (717) and a sample of parents were also selected (334). Instruments were developed, pre-tested and training was conducted over a four day period (November 2-5) at the Government Headquarters Training Room in Brades, with 11 enumerators in attendance. Data collection commenced the week of November 16, 2009. Data entry will be done in country by trained personnel using the Epi-Info Program. Analysis will be done at CFNI's office in ***Jamaica***. This collaboration involved the Ministries of Education and Health (***Montserrat***) in conjunction with CFNI. CFNI also facilitated the participation of the Nutritionist from ***Antigua*** who undertook the assessment of the food service facilities. A report is expected by mid year 2010.

Evaluation of School Meal Options in Trinidad and Tobago

A combination of methods was used in data collection viz: Focus Groups, Observations, Key Informant Interviews and a Quantitative Survey. The final sample was some 5,000 children from primary and secondary schools in ***Trinidad and Tobago.***

The main findings were:

1. While there are a number of school meal options available at the primary and secondary level, the government run School Nutrition Program (SNP) is the most popular option at the primary level and to a lesser extent at the Secondary level.
2. Students, parents and teachers are generally positive about the SNP in terms of the types of food available, taste and general operations.
3. The other school meal options (canteens, tuck shops, restaurants etc.) play a more important role in the secondary schools as some students appear to have the ability to leave the compound.
4. There is a very wide range of food and meal items available from the different school meal options and the students' preferences also cover a wide range of items. However, the fact that many students are consuming soft drinks and a range of snack items in the school setting is cause for concern.
5. The availability of fruit, vegetables and to a lesser extent legumes in the school meals observed is inadequate. This is also a concern raised by teachers and some parents.
6. The nutritional status of the children in primary and secondary schools is also cause for great concern with some 25% of the students classified as either overweight or obese. Another 14% of all students surveyed were classified as underweight.
7. Record keeping as it relates to the food service operations needs to be strengthened and restructured.
8. The status of the food service facilities at the schools needs to be more closely evaluated especially in the area of eating facilities and some areas of food safety and sanitation.

These findings and their implications will be further discussed with the Government of ***Trinidad and Tobago*** with a view to developing a program of specific interventions to address issues of concern.

POLICY ORIENTED RESEARCH

School-Based Behavioural Intervention in Four Caribbean Countries

This report presents the baseline findings for this 4-year study.

Baseline data collected were collected and analyzed from schools participating in the World Diabetes Foundation (WDF) funded project "Preventing Diabetes and Other Chronic Diseases through a School-based Behavioural Intervention". Data were collected from 1,916 students in Grades 7 (Forms 1) in Intervention and Control schools in ***Grenada, St. Kitts and Nevis, St. Vincent and the Grenadines,*** and ***Trinidad and Tobago.*** The mean age of the cohort was 12 years with 56% females and 44% of male respondents.

The data collected included:

- Students' Knowledge Attitude and Practices (KAP) related to nutrition and physical activity.
- Heights and Weights.
- Fitness levels.
- Blood Pressure.

Summary of Main Findings

Students' knowledge and awareness of correct diet behaviour and physical activity were tested. The results indicated that across both intervention and

control schools, response rates were high, with more than half of the students identifying the correct diet behaviour(s) for each nutrition question posed. This percentage was higher in intervention than control schools (though not significantly). However, students' correct responses to physical activity questions were not as high and students activity levels were low with almost half of the students (47%) reportedly being inactive for 2 hours or more on an average school day and approximately 75% on weekends

The data also looked at students reported daily eating habits (Table 1). On average only about one-third of the cohort was eating fruits and vegetables daily with ***Tobago*** reporting the lowest frequency of consumption. Peas, beans and nuts were also infrequently consumed and students from ***Grenada*** had the lowest frequency (22.6%) daily. Some 39% of all students reported consuming carbonated beverages daily whereas 63% of the students in ***Trinidad*** reported daily consumption of this item.

Of the 68% of students who reported that they ate breakfast every morning, there was no difference between intervention and control schools. However, a gender difference was detected as more males (71%) on average had breakfast every morning compared to females (65%).

The BMI by-age indicated that 64.9% of students were normal 16.7% were overweight and 13.6% fell in the category of obese. The breakdown by gender (Table 2) showed that around two-thirds of respondents, (67.6% of males and 62.7% females) were normal. Additionally, females reported higher percentages in the overweight and obese categories when compared to males, a difference of 5.6% and 1.7% respectively. The difference in obesity levels was not significant between intervention and control schools.

Students' fitness levels were also assessed using the Standards for Healthy Fitness Zone (HFZ). The students were tested for muscular endurance, flexibility, aerobic capacity and muscular strength. Flexibility results indicated that 53% of females and 39% of males failed the trunk lift test. When compared with BMI, there was a higher percentage of students within the lower BMI categories who failed this test compared to those above, that is, 50% of students whose BMI was thin or normal vs. 40% of students who were overweight or obese.

For muscular strength, a total of 663 females (63%) and 311 (39%) males failed this test. This represented a little over a half of the students from both intervention and control schools (54.2 and 51.1% respectively). Interestingly though, almost two thirds of those who were overweight failed this test and 75% of those who were obese (Figure 1).

There was no difference in the results for test of muscular endurance as more than half of the students (57%) also failed. Additionally, for this fitness level, more children with higher BMI failed.

Table 1: Once or More Per Day Consumption of Selected Food Items

Categories	Grenada %	St. Kitts %	Nevis %	St. Vincent %	Trinidad %	Tobago %	Total %
Fruits	30.1	23.8	36.1	38.7	29.3	23.3	**30.6**
Vegetables	33.6	29.6	44.8	28.1	34.0	20.8	**31.8**
Carbonated Beverages	23.7	35.4	41.8	48.5	62.6	33.3	**39.0**
Milk/Milk Products	46.4	36.0	38.5	46.3	32.7	39.5	**41.0**
Meat/Fish/Eggs	73.3	57.8	55.5	60.5	56.3	56.7	**61.8**
Peas/Beans/Nuts	22.6	27.5	30.0	30.7	29.3	29.1	**27.6**
Snacks	51.7	46.0	49.0	55.7	56.7	57.5	**51.8**

Table 2: BMI by Gender in Children 11-15 Years

	Male		Female	
	n	%	n	%
Thin	50	6.2	40	3.8
Normal	549	67.6	658	62.7
Overweight	110	13.5	200	19.1
Obese	103	12.7	151	14.4

Figure 1: Percentage of Students (based on BMI) who Achieved HFZ for Muscular Strength

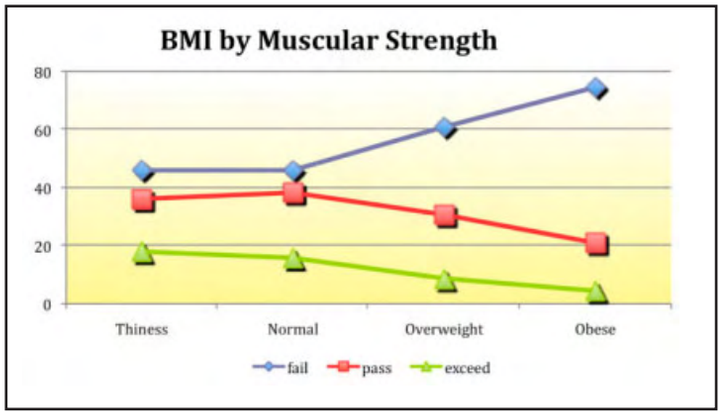
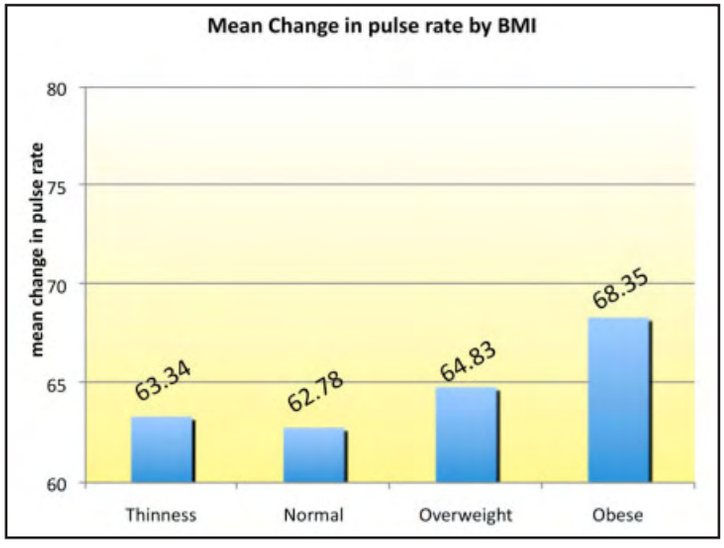


Figure 2: Mean Change in Pulse Rate by BMI-for-Age



Students Aerobic Capacity was calculated and the mean pulse rate for the cohort was 64.04 beats per minute, compared with an expected normal range of 60 to 100 beats per minute. The change in pulse rate by BMI (Figure 2) showed a steady increase in the mean pulse of students who were normal compared to those who were obese (62.8 normal – 68.4 obese).

Blood pressure levels were also collected and was calculated based on gender using age and height percentiles. With reference to systolic measures, the majority of students were within the normal range but 2.2% were pre-hypertensive and 2.4% hypertensive. Obesity among pre-hypertensive and hypertensive students showed 6.8% and 9.2% respectively. There is also some concern regarding the number of overweight students who also had normal and high blood pressure (3% each). Within the other BMI categories, pre-hypertensive and hypertensive percentages were small; that is, 1.2% or less.

For diastolic status, the percentages were slightly higher with 5.3% of students being pre-hypertensive and 3% hypertensive. There was a higher number of females than males with pre-hypertensive and hypertensive diastolic readings. There were also 17% of students who were obese with pre-hypertension and 9% with hypertension, the figure for overweight students with pre-hypertension stood at 7.2%.

Years 2 and 3 of Phase III, will also see the collection of data from the same students (as they move up in forms). Additionally, for year two, a sample of students was selected to do a 24-hour food record/recall. This will help to depict students eating habits (quantity and variety), portion size, and method of preparation and also show trends.

Development of Regional Population Dietary Goals

CFNI continued to monitor the regional availability of foods and nutrients in relation to population goals. At the same time, the Institute began a comprehensive review of existing goals with a view to updating these in keeping with current consumption patterns and best practices based on scientific evidence and experiences in other countries. This work fed into the development of a draft document on regional food security planning based on the attainment of health/nutrition goals. A draft document has been prepared and will be finalized in 2010.

Application of Nutrient Cost Analysis in the Revision of Poverty Lines

CFNI provided technical assistance to ***Jamaica, Belize*** and the ***Bahamas*** in the revision of their basic food baskets as part of Poverty Line revisions.

In ***Belize***, the specific activities were to:

- Prepare a Minimum Food Basket (MFB) capable of providing an adult with 2,400 calories and a balanced diet.
- Base this MFB on that used for the 2002 Country Poverty Assessment (CPA) taking into account changes in dietary habits which have occurred since then.
- Work with the Statistical Institute of Belize (SIB) to estimate the current cost of this food basket, specifically in April 2009 when the LSMS was conducted.
- Provide similar food baskets for each region of the country taking into account variations in cost and dietary habits and regional MFBs prepared in 2002.
- For all tasks, the methodology used in the 2002 CPA should be followed. (reference can also be made to the MFBs prepared for other recent CPAs).
- Conduct training for officers of the Statistical Institute of Belize and other relevant and interested agencies in the methodology of nutrient cost analysis.

Over a 2-week period, the activities were conducted in close collaboration with the Nutrition Unit and the Statistical Institute and involved field visits to a number of regions to observe food availability status and prices. The output was the development of regional baskets for the 6 districts in ***Belize*** which were then used in the calculation of the Indigence Poverty Line and ultimately the overall poverty line for 2009.

In ***Jamaica***, work continued with the Planning Institute of Jamaica on the revision of their Basic Food Basket and CFNI worked on using Nutrient Cost Analysis to determine various options of a low cost, culturally acceptable basket that met both acceptable nutrition standards as well as reflecting existing purchasing patterns among the poorest in Jamaica. This activity too forms part of the country's initiative to review their poverty line.

The ***Bahamas*** government also requested assistance in their revision of the Poverty Line and this involved CFNI assisting with the review of the data collection instrument, the input of food price data and the generation of a food basket. This was done in collaboration with the Nutrition Unit and the Statistical Department in the ***Bahamas***.

Nutrition Information on Food Labels

With the increase of not only chronic diseases but also knowledge as it relates to lifestyle practices and the diversifying of cultures in the Caribbean, consumers have become more proactive in the maintenance and achievement of optimal health. Food labels were designed to help people choose foods for a healthful diet, that is, one with the right amount of nutrients the body needs daily. In 2009, the data from a study which was done to assess nutrition information on food labels in ***Jamaica*** and ***Trinidad and Tobago*** were analyzed. Some of the information in the report is summarized below.

A convenience sample of packaged products was taken from four supermarkets in ***Trinidad and Tobago*** and nine in ***Jamaica***. A total of 669 products in Jamaica and 292 in Trinidad and Tobago were observed. The products were from 13 food categories (see Table 3).

Country of Origin

All the products were labelled with the country of origin. While 92% of the products observed in ***Jamaica*** had a list of ingredients, this information was present on 72% of the products observed in ***Trinidad and Tobago.***

Table 3: Number of Observations, by Product Group

Product Group	Jamaica	Trinidad & Tobago
Cereals and Cereal Products	178	58
Legumes and Nuts	87	21
Fruits and Vegetables	18	13
Meat, Fish, Poultry & Eggs	27	35
Dairy Products	19	34
Baked Goods	42	12
Fats and Oils	72	17
Sugars and sweeteners	40	16
Beverages	48	41
Snack Items/Sweets/Candy	105	20
Sauces and Salad Dressings	7	7
Mixed Dishes	18	9
Seasonings	8	9
All products	**669**	**292**

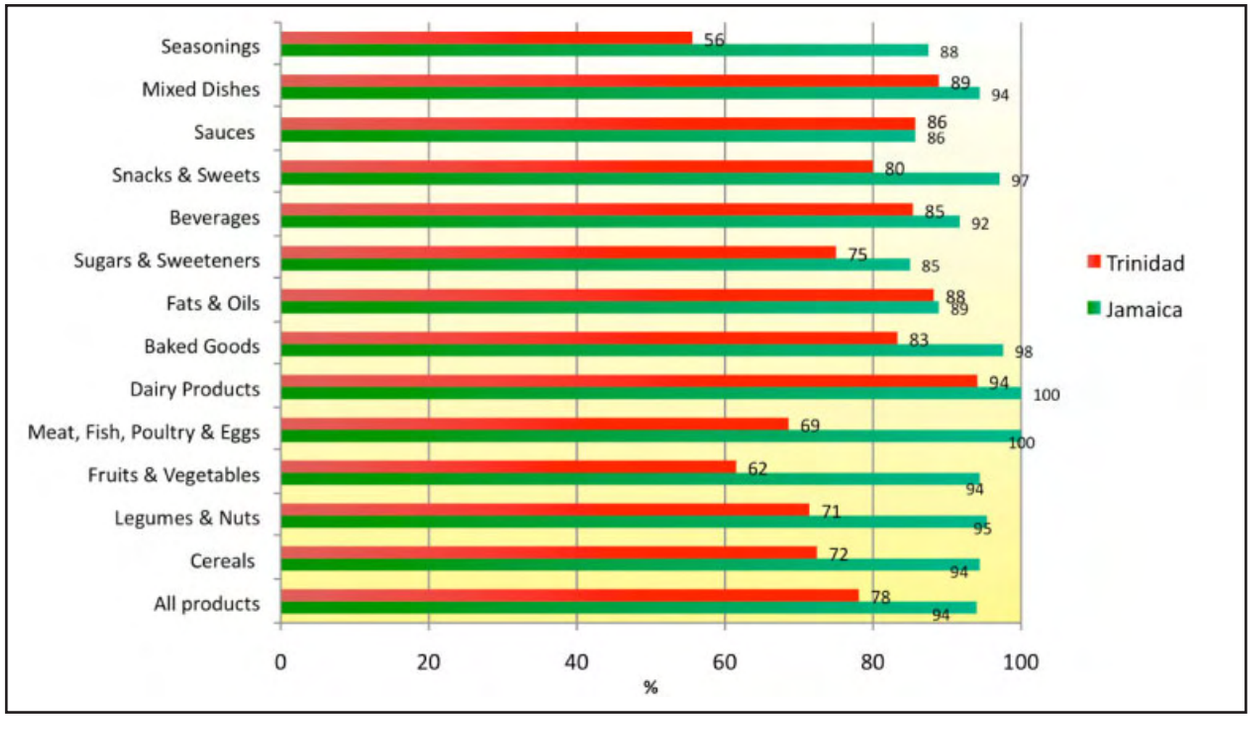
Date Markings

In both countries, the majority of the packaged goods observed had a date marking indicating last date when the product should be used; this included "expiry", "sell by" or "best before" date. This amounted to 94% of products in ***Jamaica*** but was lower in ***Trinidad and Tobago*** (78%). However, this information varied by product group (Figure 3). In ***Jamaica***, date markings were most common on packaged meat, fish, poultry and egg products (100%), dairy products (100%) and baked goods (98%). In ***Trinidad and Tobago***, date markings were most common on dairy products (94%) and mixed dishes (89%).

Nutrition Fact Panels

Most of the labels observed in both countries had nutrition facts panels (nutrition labels) (Figure 4). The frequency was 85% on foods in ***Jamaica*** and 79% on foods observed in ***Trinidad and Tobago***. In both countries, all the mixed dishes observed had

Figure 3: Percentage of Products with Date Marking



nutrition fact panels. Nutrition fact panels, in Jamaica, were least common on packaged products in the category meat, fish, poultry and eggs (46%). While 100% of packaged seasonings observed in ***Jamaica*** were recorded as having nutrition fact panel, only 22% in ***Trinidad and Tobago*** had this information.

Servings

The majority of packages in each country had serving size information. (Figure 5). In ***Jamaica***, 100% of the sauces and salad dressings had this information, as did the seasonings. Only 22% of seasonings observed in ***Trinidad and Tobago*** had serving size information.

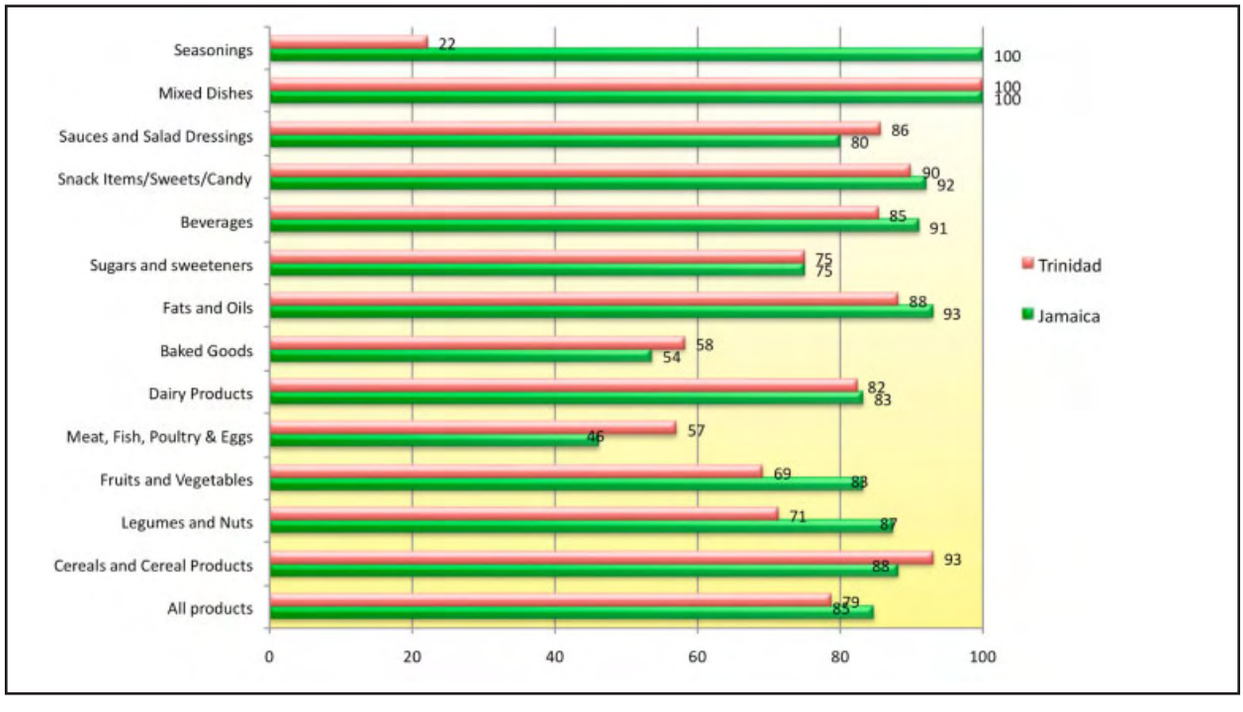
Nutrients

Information on nutrients most commonly listed on the nutrition labels were identified from the products observed. According to Codex Standards, if a nutrition label is used, it should include energy, protein, available carbohydrate, fat; any other nutrient for which a nutrition or health claim is made; and any other nutrient deemed by the country's authorities as relevant for good health. Figure 6 shows how frequently energy and nutrient content were listed on labels. On the Jamaican products this ranged from 16% of labels with trans fat content listed, to 46% listing carbohydrate content. On the ***Trinidad*** products 37% of products listed trans fat content and protein and energy were both listed on 78% of products.

Conclusion

The results of this survey of food labels on Jamaican and Trinidadian supermarket shelves provide information which can be used to inform education programs for consumers. There was a limitation in the methodology, as a small convenience sample was used. However, the collection of data from several locations in the two countries is thought to have yielded results with applicability to other areas. Additionally, the range of products for which data was collected was comprehensive.

Figure 4: Percentage of Products with Nutrition Fact Panels



At the time of the survey, the CARICOM Regional Standard for Labelling of Pre-packaged Foods had not yet been finalized. However, it was clear that most of the products surveyed were already adhering to some of the aspects of that standard.

Despite the fact that use of the nutrition label is not mandatory, except if claims are made, most packaged foods had nutrition labels. Some of the foods that were without nutrition labels could have been retailed products; that is, packaged by the establishment, or due to some degree of interviewer error. This was likely due in parts to efforts to meet standards of trad-

Figure 5: Percentage of Products with Serving Size

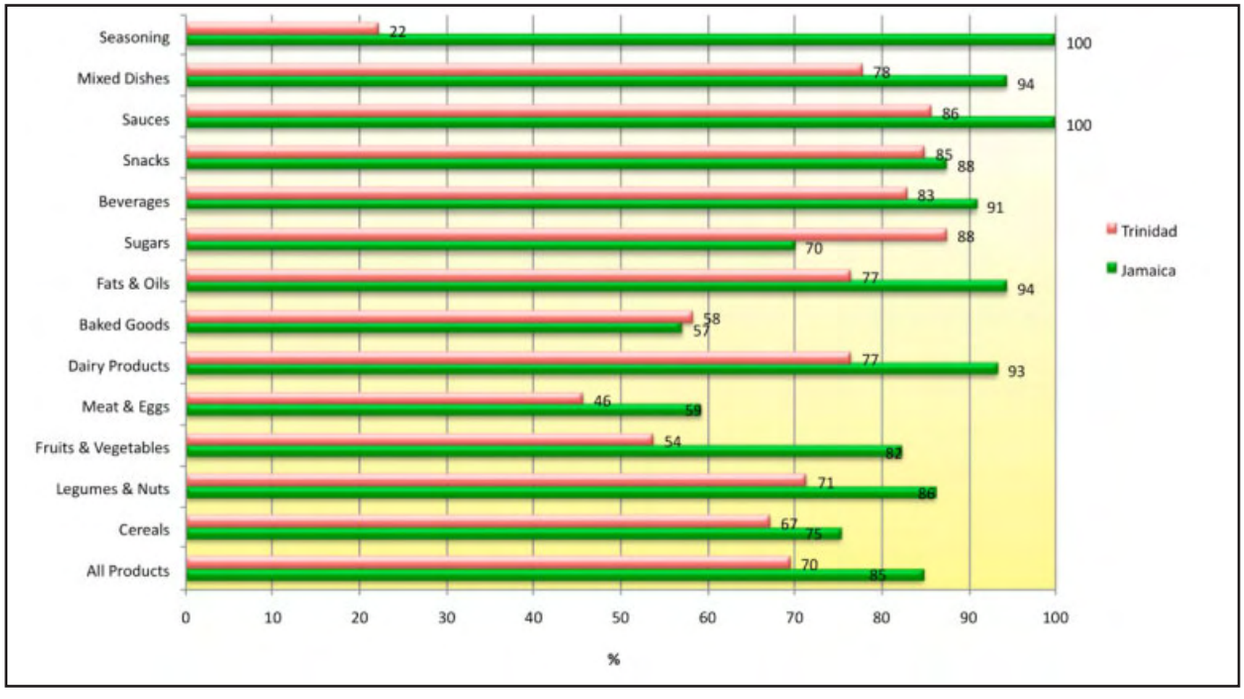
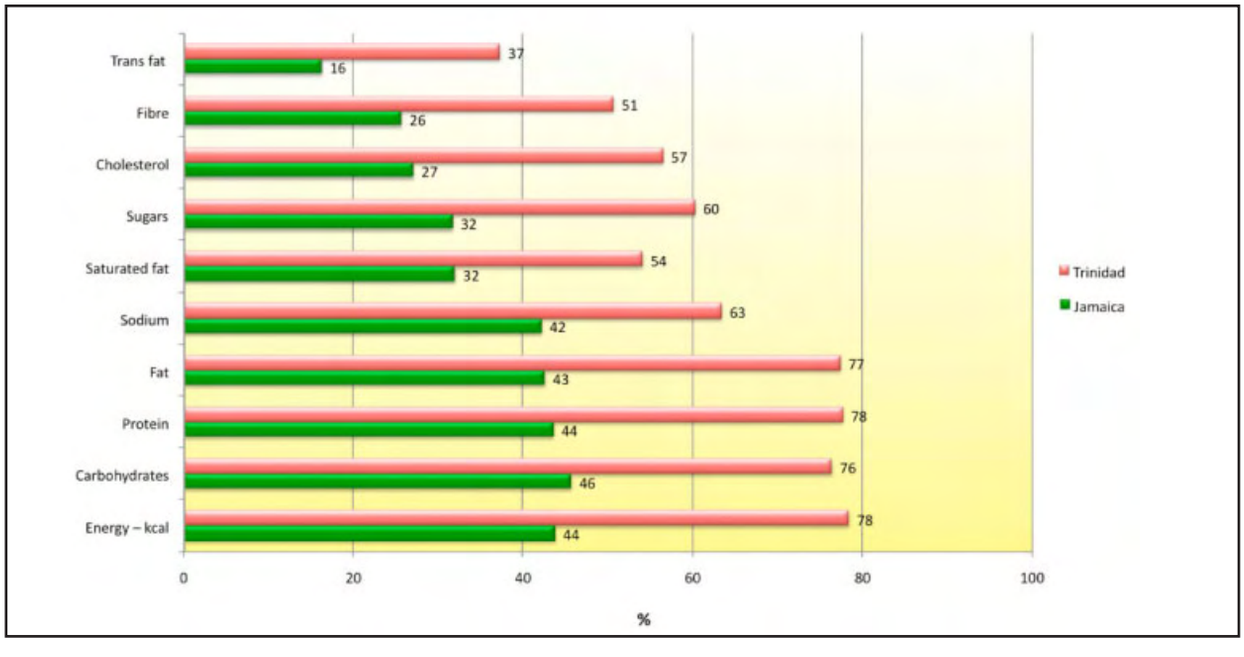


Figure 6: Percentage of Products with Energy and Nutrient Content listed



ing partners such as the ***USA***, if these products are being exported. There has also been consumer education by various entities such as the Ministries of Health and CFNI, which may have resulted in demand for such information on products. Further research on consumer use of the information on food labels is now warranted.

A Comparison of the Nutrient Content and Cost of Commercial vs. Homemade Complementary Foods in Jamaica

During the first two years of life, good nutrition is crucial as a child undergoes a period of rapid growth and development. Studies have indicated that an infant's nutritional intake is a determinant of healthy eating habits, pattern and status in childhood and adulthood.

The World Health Organization recommends that an infant should be fed exclusively with breast milk for the first six months after which time the child should be introduced to appropriate complementary foods in order to fill the child's growing needs.

Complementary (weaning) foods consist of different types of liquid, semi-solid and solid foods so as to smooth the transition from a breast milk diet to that of an adult.

There are two types of complementary foods; commercially made and homemade. For years, nutritionists and economists have long advocated the use of homemade foods instead of commercial product due to nutrient density and cost. This report compares the cost, calorie and nutrient content of twenty commercial complementary foods available in ***Jamaica*** against twenty homemade complementary foods.

Methods

A list of twenty randomly selected commercial complementary foods was created by visiting six supermarkets in the urban areas of Kingston and St. Andrew and one rural town – Morant Bay, between July 2008 and December 2009. The list included information on the cost, nutrient content per serving, list of ingredients and net weight per container. The cost of each item was verified/updated in December 2009.

Items for homemade recipes were purchased during the month of December 2009 from two of the six supermarkets above as well as the major wholesale market in ***Jamaica*** – the Coronation Market in Kingston.

Homemade Recipes

Homemade recipes were developed and tested in the Food Demonstration Kitchen of CFNI. These recipes were based on the major ingredients listed on commercial foods labels except in case of availability and cultural acceptance e.g. turkey meat was substituted by fish fillet due its unavailability locally. The texture, appearance and taste of each commercial product were also considered in establishing homemade recipes.

Nutrient Calculation: Nutrient values were based on 100 g edible portions using primarily CFNI's Food Composition Tables for Use in the English-speaking Caribbean (1998) and to a lesser extent nutrition data.com. Calculations were done for kilocalories (kcal), macronutrients (total carbohydrate, protein and fat) and three micronutrients (iron, vitamin C and sodium).

Findings

The majority of homemade items appear to provide similar energy and nutrient values at a lower cost than commercial complementary foods. However, a more detailed analysis is required for comparing the vitamin C and iron content of the two types of complementary foods. In addition imputed labour costs will have to be applied to the homemade recipes. These and other revisions will be incorporated into a final version of this study during 2010.

HIV/AIDS

Two training sessions were conducted: one in ***St Vincent and the Grenadines*** and the other in ***Jamaica*** for health care workers on improving the nutritional care offered to persons with HIV/AIDS.

HUMAN RESOURCE DEVELOPMENT

Summary of CFNI Training Programmes – 2009

COUNTRIES SERVED	TOPIC	DURATION	AUDIENCE (N)
Antigua	Use of Epi Info software for basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
Barbados	Use of Epi Info software for basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
Belize	Three presentations made at the Workshop on Food and Nutrition Planning and Co-ordination: • "Basic Steps in Food and Nutrition Policy Formulation" • "The Policy Thematic Areas" • "Project Planning and Evaluation: The Logical Framework Approach".	1 day	Participants included members of Belize Food and Nutrition Security Commission; Representatives of the Nutrition Unit, Ministry of Health; Community Health Workers, Ministry of Health; PAHO; School Feeding Program; HECO-PAB; BAHA; Agriculture; the University; Ministry of Education. **(30)**
Dominica	Use of Epi Info software for basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
Grenada	WDF Schools Project Refresher Teacher Training (several topics).	2 days	Form 1/Grade 7 Teachers of St. Marks Secondary and Anglican High School. **(35)**
	WDF Schools Project Teacher Training (several topics).	5 days	Form 2/Grade 8 Teachers of St. Marks Secondary and Anglican High School. **(30)**
	Conduct of 24-hour dietary recalls.	3 days	Nutrition and dietetics personnel. **(3)**
	Use of Epi Info Software for data entry, basic analysis and reporting.	5 days	Nutrition officers from the Grenada Food and Nutrition Council, Epidemiologists, health education officers, personnel from environmental health, HIV/AIDS management, health promotion, infectious disease control. **(20)**

COUNTRIES SERVED	TOPIC	DURATION	AUDIENCE (N)
Jamaica	Using the food label in health and disease	1 day	Staff of the Health Promotion and Protection Division, Ministry of Health. **(20)**
Montserrat	Two presentations made at the training Workshop for the members of the Food and Nutrition Council: • "Strategic Planning" • "Logical Framework approach to Planning and Co-ordination".	1 day	Representatives of the Ministry of Education Youth Parliament; Trade; Teachers Union; Chamber of Commerce; Consumer Association Ministry of Social Services; Ministry of Agriculture. Health Promotion, Ministry of Health; Nutrition Officer, Ministry of Health; the Director, Environment. **(12)**
	Use of Epi Info software for data entry, basic analysis and reporting.	5 days	Data entry personnel, statisticians and health promotion from the ministries of health and education. **(12)** Use of Epi Info software for
	basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
St. Kitts/Nevis	Use of Epi Info software for data entry, basic analysis and reporting.	5 days	Data entry personnel, statisticians and health promotion from the ministries of health and education. **(12)**
	Use of Epi Info software for basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
St. Lucia	Use of Epi Info software for basic and more advanced analysis and reporting.	4 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**
St. Vincent and the Grenadines	WDF Schools Project Teacher Training (several topics).	4 days	Form 2/Grade 8 Teachers of Bethel High School and Thomas Saunders Secondary. **(11)**
	Use of Epi Info software for basic and more advanced analysis and reporting.	5 days	Nutrition officers, statisticians, epidemiologist, data entry personnel, health information personnel. **(10)**

COUNTRIES SERVED	TOPIC	DURATION	AUDIENCE (N)
Trinidad and Tobago	WDF Schools Project Refresher Teacher Training (several topics) – **Trinidad.**	2 days	Form 1/Grade 7 Teachers of San Fernando East Secondary. **(10)**
	WDF Schools Project Refresher Teacher Training (several topics) – **Tobago.**	2 days	Form 1/Grade 7 Teachers of Roxborough Composite Secondary. **(20)**
	WDF Schools Project Teacher Training (several topics) – **Trinidad.**	5 days	Form 2/Grade 8Teachers of San Fernando East Secondary. **(8)**
	WDF Schools Project Teacher Training (several topics) – **Tobago.**	5 days	Form 2/Grade 8 Teachers of Roxborough Composite Secondary. **(8)**
	"Food and Nutrition Policy Development".	1 day	UWI BSc Nutrition Final Year Students. **(30)**
	"Food Security, Nutrition and Health in the Caribbean: Perspectives from CFNI".	1 day	Representatives from: FAO; IICA; CARDI; Ministry of Agriculture; University of the West Indies; UNECLAC; CARIRI; KAIRI Consultants. **(25)**
	Conduct of 24-hour dietary recalls – **Trinidad.**	3 days	WDF Project Country coordinator and nutrition and dietetics graduates. **(4)**
	Conduct of 24-hour dietary recalls Tobago.	3 days	WDF Project Country coordinator and school feeding personnel. **(4)**

The training in ***St Vincent and the Grenadines*** involved over 20 participants from the Milton Cato Hospital, while in ***Jamaica*** the participants were selected from all of the regions and involved a range of health care workers form both primary and secondary care. The team training approach was used for both workshops with local persons supported by CFNI officers. Many of the local trainers were participants in previous training conducted by CFNI in this project.

Nutrition algorithms were developed and plans are on stream for their pretesting and eventual launch of the algorithms and guidelines in 2010. Pretesting will take place in three (3) territories among health care workers.

Awards/Partnerships/ Collaborations/ Technical Consultations

1. CFNI was the recipient of Wellness and Lifestyle Award from the Environmental Health Foundation ***(Jamaica)*** for outstanding contribution to wellness and healthy lifestyles.

2. CFNI was the recipient of the award from the Empowering Lives for the Future Ministries and Ministry of Health for outstanding commitment and support to Jamaica's National Infant and Young Child Feeding Program.

3. Collaborated with the Ministry of Health and the Ministry of Education in implementing a project *"Evaluation of School Meal Options in Trinidad and*

Tobago". Conducted Key Informant Interviews, Focus Group Discussions and Observations of school facilities and meals.

4. Collaborated with the Ministry of Education, the Ministry of Health and the Ministry of Sport and Youth Affairs in the implementation of the WDF project: *"Preventing Diabetes and Other Chronic Diseases Through a School-based Behavioural Intervention in Four Selected Caribbean Countries"*.

5. In collaboration with the Ministry of Health, CFNI chaired the sub-committee for the National Primary School Quiz Competition, developed all materials and organized the judging for all rounds of the competition that culminated with a final round on Caribbean Nutrition Day 2009.

Refresher Training, Roxborough Composite, Tobago, March 2009

6. In collaboration with the Ministry of Education, conducted Refresher Training for Forms 1 and 2 teachers as part of the WDF Project in the following schools:

   - Roxborough Composite Tobago
   - San Fernando East Secondary School, ***Trinidad***
   - St. Marks Secondary School and Anglican High School, ***Grenada***
   - Petit Bordel High School and Thomas Saunders Secondary School, ***St. Vincent and the Grenadines***
   - Gingerland High School and Washington Archibald High School, ***St. Kitts and Nevis.***

7. Conducted training, in all four WDF Project countries, in 24-hour recalls with nutrition and dietetic professionals and other quantitative data collection training for other data collectors in the WDF Project.

8. Participated in the meetings of the Cabinet-appointed Technical Committee for Chronic Non-communicable Diseases. CFNI spearheaded the development of an Operational Plan for the Committee. CFNI is chair of the Diet Sub-Committee and prepared the presentation entitled "Health Promotion and Disease Prevention" as it relates to Expected Results #1, 2, and 3 of the Operational Plan, for the Meeting with the Minister of Health scheduled for 20 January 2010.

9. Participated on the Planning Committee for "The Partners Forum for Action on Chronic Diseases in Trinidad and Tobago" held 10 December 2009.

10. Participated in several technical group meetings with the Ministry of Health, ***Trinidad and Tobago***, for example:

    - The Caribbean Wellness Day Committee. Participated in the Minister

of Health Press Conference on Caribbean Wellness Day, 19 September 2009.

- National Health Promotion Committee.

11. Participated on a sub-committee set up by the Ministry of Legal Affairs, Consumer Affairs Division to develop a Position Paper "Factors Influencing Food Consumption Patterns in Trinidad and Tobago". The completed final draft document is to be presented to the Minister early in 2010.

12. Participated in the meetings of the National Agricultural Advisory Commission set up by the Minister of Agriculture Land and Marine Resources. The main goal of the Commission is to *"provide advisory, monitoring, evaluating and reporting services to the Minister of Agriculture Land and Marine Resources and his/her nominees, on all matters relating to the preparation and implementation of the National Food and Nutrition Security and Agri-business Competitiveness Plan".*

Refresher Training, San Fernando East Secondary School, Trinidad, March 2009

13. Participated in CARICOM meeting on "Implementing the CARICOM Community Agricultural Policy: Issues, Options and Process", Cascadia Hotel.

14. Participated in IICA, ***Trinidad and Tobago*** Annual Accountability Meeting.

15. Participated in the Roundtable Launch of IICA/CARDI Awards for Excellence in Agriculture Journalism held 6 October 2009. The Roundtable meeting focused on "The Role of the Media in Promoting Food Security in Trinidad and Tobago" The main objectives of the roundtable was to:

    - Foster a greater understanding of the food security issues among the media in ***Trinidad and Tobago.***
    - Increase the interaction between the agricultural sector and the media.
    - Encourage more informed reporting on food security issues.
    - Encourage awareness of food security issues among citizens of ***Trinidad and Tobago***.
    - Create new partnerships between agricultural sector stakeholders and the media.

16. Participated on an IICA sub-committee to develop the proposed Agricultural Agencies Communications Network as a follow-up mechanism from the Roundtable Launch of the Agricultural Media Awards. CFNI developed a draft program and materials to guide the development of a strategic plan

for the proposed Network. CFNI will play a key role in that Strategic Planning Workshop planned for February 2010.

17. CFNI was represented at the IICA Day Celebrations held on 7 October 2009.

18. Participated on IICA Working/Technical Group for the IICA/CARDI Project "Enhancing Information and Communication for Food Security in Trinidad and Tobago". Brochures, Copy Books with Food Security information; and a Poster were developed.

Refresher Training, St. Marks Secondary School and Anglican High School, Grenada, March 2009

WDF Year 2 Teacher Training, Petit Bordel High School and Thomas Saunders Secondary School, St. Vincent and The Grenadines

19. Participated in the CARICOM/UNICEF Health and Family Life Education (HFLE) in ***St. Lucia***, 28 September – 2 October 2009. The main purpose of the meeting was to: *"Review and update the CARICOM-led HFLE Strategy with the aim of infusing Drug Prevention in the Regional HFLE Curriculum".*

20. Participated in the CARICOM Biosafety Meeting, 17-18 March, ***Barbados***. The meeting was held to reactivate the Regional Working Group and to work on the GMO-Biotechnology Regional Policy and Strategy.

21. Participated in the University of the West Indies, St Augustine, launch of their Employee Health and Wellness Program. CFNI literature was displayed and distributed to persons in attendance.

22. Participated in a Nutrition and HIV/AIDS workshop for selected health care professionals 14 and 15 July, ***Trinidad and Tobago***. This two day program was aimed at improving the quality of life of people living with HIV/AIDS by implementing an integrated approach to nutritional treatment care and support.

23. Participated in a Gender Mainstreaming in Health training Workshop 30 September – 2 October 2009. This workshop sought to enhance the skills of the PAHO sub-regional staff in the Caribbean on gender mainstreaming in health as part of the implementation of the

Organization's Gender Equality Policy and also to promote gender responsive technical cooperation,

ensuring that differential issues and needs of the women and men are recognized, taken into account, and addressed in health programs, policies and projects.

24. Prepared a paper for UNICEF on Estimates of Cost of Feeding 0-4 Year Olds in ***Jamaica***.

25. Participated in meetings of Jamaica's National Infant and Young Child Feeding Committee and supported the Committee's work in research into infant feeding practices, promotion of breastfeeding and development of policy documents.

26. Participated in Ministry of Health and UNICEF meeting to disseminate baseline results from Exclusive Breastfeeding Pilot in Clarendon and St. Catherine, ***Jamaica***.

27. Collaborated with the Bureau of Standards Jamaica in the development and revision of standards, through representation on the National Standards Committee, National Food Standards Committee, National Codex Committee and Labelling Committee.

28. Collaborated with the National Agricultural Health and Food Safety Coordinating Committee in the coordination of food safety programs in ***Jamaica***.

29. Participated in the National Physical Activity Stakeholders meeting, Technical Working Group on Physical Activity and advocacy/policy subcommittee ***(Jamaica).***

30. Collaborated with the Early Child Commission in Jamaica in the setting of standards, and coordination of early childhood and nutrition programs.

31. Participated in stakeholders meeting for the post-graduate Dietetic/Nutrition Internship Program in ***Jamaica***.

32. Participated in the Fifth Ministerial Meeting of the Inter-American Board of Agriculture (IABA) held in ***Jamaica***. The theme of the meeting was Building Capacity for Enhancing Food Security and Rural Life in the Americas.

33. Participated in meeting on Salt Consumption in the Americas. The meeting, held in Miami, Florida, ***USA*** was organized by PAHO and the Public Health Agency of Canada. The purpose was to document the policies and initiatives in the Americas Region aimed at reducing dietary salt to prevent and control chronic non-communicable diseases, and to feature relevant experiences in CARMEN countries, other countries and WHO regions.

Major Presentations

1. *Eradication: A Hemispheric Mission* - Presentation at the 4th Steering Committee Meeting of CaribVET, Trelawny, ***Jamaica***, 16 March 2009.

2. *Report on the Assessment of Veterinary Needs in the Caribbean Sub-region* – Presentation at the Chief Veterinary Officers Meeting, Trelawny, ***Jamaica,*** 18 March 2009.

3. *Proposed Guidelines for Port Health Surveillance Systems.* Presentation at Chief Veterinary Officers Meeting, Trelawny, ***Jamaica***, 18 March 2009.

4. *School-based Nutrition Programs a Caribbean Experience.* Presentation at the Sub-regional Workshop on Health Promotion Policy, ***Canada***, 25-27 March 2009.

5. *Food & Nutrition in Natural Disasters: Key Issues for the Health Sector in Disaster Preparedness and Management.* Presentation to students in the Masters in Public Health (MPH) program at the University of the West Indies, Mona, ***Jamaica***, 25 March 2009.

6. Caribbean Food Crisis: Implications and Responses. Presentation to PAHO representatives and CARICOM officials and senior technical officers in the Bahamas Ministry of Health. ***The Bahamas***, April 2009.

7. *An International Health Regulations Perspective for Health and Tourism.* Presentation at the First PAHO Caribbean Sub-Regional Working Group Meeting on Health and Tourism, Grand Barbados Hotel, ***Barbados***, 2-3 April 2009.

8. *Food Security, Nutrition and Health in the Caribbean: Perspectives from CFNI.* Presentation at Round Table Discussion on the FAO Project "Promoting CARICOM/CARIFORUM Food Security" (project GTFS/RLA/141/ITA), University of the West Indies, ***Trinidad and Tobago***, 23 April 2009.

9. *International Health Regulations (IHR) in Jamaica.* Presentation at The National Ship Sanitation Training Workshop for Port Health Officers, Ocho Rios, ***Jamaica***, 28 April 2009.

10. Health Promoting Schools: A systematic Approach to Support Healthy Eating in Caribbean Schools. Presentation to joint COHSOD Ministers of Health and Education. ***Jamaica***. June 3, 2009.

11. The concept and rationale of Workplace Wellness. Presentation made to Chief Executive Officers of various public, private and academic enterprises. ***Grenada***, 10 June, 2009.

12. *Developing an Effective Food Safety Policy for Grenada.* Presentation at the Working Group Meeting for Formulating a Food Safety Policy, ***Grenada***, 24 August 2009.

13. Preventing Diabetes and Other Diseases Through a School-Based Behavioral Intervention in Four Countries. Presented to representatives of the World Diabetes Foundation. ***Jamaica.*** September 2009.

14. The implementation of Workplace Wellness Programs. Presentation made to Chief Executive Officers of various public, private and academic enterprises. ***Grenada***, 15 September 2009.

15. *Food and Nutrition Policy Development.* Lecture to the Third Year BSc in Nutrition and Dietetics Students,UWI, St Augustine Campus, ***Trinidad and Tobago*** 9 October 2009.

16. Developing a Food Security Policy for Jamaica. Presentation made to the Minister of Agriculture, Permanent Secretary and other senior technical officers of the Ministry of Agriculture. Jamaica. 15 October 2009.

17. Participated in the 7th Global Conference on Health Promotion. Worked with the WDF team to prepare Position Paper on Diabetes which was used as an advocacy tool for inclusion in the "Call for Action" Nairobi, ***Kenya***, 26-30 October 2009.

18. *Food Safety in the PAHO Region: Emphasis on the Caribbean Sub-region* Presentation at the Integrated Foodborne Disease Surveillance Workshop, Grand Barbados Hotel, ***Barbados***, 22-29 November 2009.

19. Developing Regional and National Food Security Policies. Presentation made to senior technical officers in Agriculture and Health across the Caribbean. Georgetown, ***Guyana***. 30 November 2009.

20. *Nutrition and Hypertension.* Presentation to second year associate degree students at Excelsior Community College, ***Jamaica***, 1 December 2009.

Promoting Healthy Lifestyles in Schools

PROMOTION AND DISSEMINATION

CFNI continued the implementation of the WDF Four-country project. The school intervention continued with classroom teaching and promotional days' activities. Parent meetings and sessions were done and both the school and country teams met to plan activities. Materials for classroom teaching for Form 2/Grade 8 were developed. These were used in the Teacher Training Workshops conducted in all four countries. Infused lessons were also developed during the teacher training sessions. Data were collected from all Form 2/Grade 8 students: 24-hour recalls and self administered questionnaires. Baseline data were collected from new Form 2/Grade 8 students who were never exposed to the project. The promotional activities to mark World Diabetes Day and Caribbean Nutrition Day were implemented. The following documents were developed for training:

Nutrition Promotion

1. For the Trinidad and Tobago National School

Worksheet 29	My Meals
Worksheet 30	Personal Reflection: A Closer Look at the Foods I Eat
Worksheet 31	Parts of a Label
Worksheet 32	Looking at Food Labels at Home
Worksheet 33	Personal Reflection: Getting the Facts
Worksheet 34	Did you have breakfast Today?
Worksheet 35	A Story About Breakfast
Worksheet 36	My Breakfast Food Record
Worksheet 37	Personal Reflection: How do I feel about breakfast?
Worksheet 38	Our Caribbean Athletes Keeping Fit
Worksheet 39	Personal Reflection: Keeping Fit
Worksheet 40	Evaluating My Activities
Worksheet 41	Monitoring Types of Physical Activity
Worksheet 42	Monitoring the types of physical activity I engage in
Worksheet 43	Engaging Support for my activity contact
Worksheet 44	Personal reflection maintaining physical activity
Worksheet 45	To which food groups do these foods belong?
Worksheet 46	Finding out about the foods that I eat
Worksheet 47	24 Hour Food Recall
Worksheet 48	Personal Reflection: "Getting Variety without excess fats, salts and sugars

Worksheet 49	Marcy's Concern
Worksheet 50	Personal Reflection: My sources of nutrition information
Worksheet 51	Factors that affect daily consumption of food
Worksheet 52	Tally Sheet 1: Classification of Factors that influence your daily consumption of food
Worksheet 53	Tally Sheet 2: Classification of food choices by food groups
Worksheet 54	Family food survey
Worksheet 55	Personal Reflection: Factors influencing my food choices
Worksheet 61	Grouping of foods for breakfast
Worksheet 62	Breakfast Plans
Worksheet 63	Personal reflection "My Choices for Breakfast"
Worksheet 67	Vitamin and Mineral Content of Fruits and Vegetables
Worksheet 68	My Fruit and Vegetable Recall
Worksheet 69	Personal Reflection: How Often do I eat fruits and vegetables
Worksheet 70	Design a poster
Worksheet 71	Personal reflection: A Closer look at my fruit and vegetables intake
Worksheet 74	Ways to reduce salt and fat
Worksheet 75	Design a Poster
Worksheet 76	Personal reflection: Reducing my salt and fat intake
Worksheet 80	Snacks and beverages at the canteen and vendors
Worksheet 81	Snacks and beverages made at home
Worksheet 82	Making a request for healthier snacks
Worksheet 83	Personal reflection: Making my snacks more nutritious
Worksheet 84	Personal Hygiene Chart
Worksheet 85	Personal Reflection: "My Personal Hygiene Practices"
Worksheet 86	My activity recall
Worksheet 87	Personal reflection: My aerobic capacity activities
Worksheet 91	Physical Activity Chart
Worksheet 92	My Moderate physical activity plan
Worksheet 93	Personal reflection: Maintaining moderate physical activity

Quiz Competition, CFNI prepared a brief presentation for the attending secondary school children and teachers about CFNI's Regional School Nutrition Quiz Competition.

2. In collaboration with the Ministry of Health, CFNI chaired the sub-committee for the National Primary School Quiz Competition, developed all materials and organized the judging for all rounds of the competition that culminated with a final round on Caribbean Nutrition Day 2009.

2009 Caribbean Nutrition Day

Caribbean Nutrition Day 2009 was celebrated under the theme "Healthy Eating and Active Living: A Family Affair". A poster/flyer was designed for the occasion and disseminated to member countries in addition to other relevant posters available at CFNI. Countries were encouraged to involve their own Ministers of Health and other officials to prepare and deliver messages in keeping with the theme. Several countries shared their plans and activities for the day and these were posted on the CFNI website. The CFNI family focused on increasing physical activity through their steps to health initiative which culminated on PAHO Wellness Day.

Food-Based Dietary Guidelines

Students viewing a CFNI display

CFNI continued to work with member countries on the development, implementation and promotion of Food-Based Dietary Guidelines, which are used to give simple dietary advice to help the population make healthy choices that promote healthy lifestyles.

Dominica

Following on CFNI's technical assistance in the development of guidelines in Dominica in collaboration with the Institute of Nutrition of Central America and Panama (INCAP) and the Food and Agriculture Organization (FAO), that country was assisted further in the promotion of the guidelines. The 10-point set of guidelines had previously been launched, supported by a package of promotional materials branded with the image of the country's national bird 'Sisserou' an umbrella symbol for the multi media messages. Ongoing monitoring and assessment of the promotion initiatives underscored the need for further capacity building in social communication generally and message development and dissemination specifically.

Against this background, CFNI, in collaboration with the Ministry of Health, facilitated a two-day workshop in Dominica in May. The goal of the workshop was to develop and strengthen the capabilities of participants, which included health education, environment, nutrition and communication officers, in the skills and strategies needed to design and promote the FBDGs. A mixture of presentations and working groups was used to achieve the objective of enabling participants to:

1. Understand key guidelines in marketing a health product.

2. Undertake a basic analysis of market audience(s), channels and messages.

3. Identify key elements in preparing a marketing strategy.

4. Produce a creative brief to guide the development of a communication intervention aimed at promoting key messages in the new FBDGs for Dominica.

The workshop targeted nutrition, health education and communication/information officers responsible for planning, implementing and evaluating health communication programs, specifically Dominica's Food-Based Dietary Guidelines. The 25 participants in attendance came from a wide variety of public sector entities, including agriculture, health and education, media/information and NGOs.

Belize

Belize's food-based dietary guidelines are being developed under the auspices of the National Food and Nutrition Security Commission. In November, in collaboration with the Government of ***Belize*** and PAHO, CFNI facilitated a workshop for the multisectoral committee, the objectives of which were to:

1. Present the health and nutrition situation of Belize.
2. Discuss implications of the health and nutrition situation and strategies for alleviating them.
3. Determine priority problems and set national objectives to be addressed through Food Based Dietary Guidelines.

The 28 participants included representatives from the Commission, the Ministries of Health, Education, and Agriculture and Fisheries, and the Belize Agricultural Health Authority. Various presentations were made by local presenters to describe the food, nutrition and health situation of the country. The CFNI facilitators, as well as informing participants of the process of developing food-based dietary guidelines and highlighting some critical food and nutrition security issues in ***Belize***, guided them through working group discussions, the outputs of which was a prioritized list of nutrition problems in the country, which should be addressed by the guidelines.

The process will continue with the development of technical guidelines which will define the nutritional goals for the population and convert these into types and quantities of food.

Jamaica

Jamaica is at the stage of development of food-based dietary guidelines and has now compiled a list of draft guidelines and proposed illustrative diagrams. CFNI continues to provide technical input through the task force meetings and developmental workshops being used to further the process.

Anaemia Prevention and Control

Iron deficiency anaemia, particularly in pregnant women and young children, continues to be a problem in some Caribbean countries. Recommended strategies for prevention and control of micronutrient deficiencies such as this include supplementation, use of fortified foods, modifying the diet to optimize iron intake and absorption, and other public health measures. To guide the implementation of these strategies, CFNI has developed a **Regional Protocol for the Detection, Prevention and Treatment of Anaemia in Maternal and Child Health Clinics in the Caribbean.** These guidelines, still in draft form, will be made available to member countries once finalized.

A country-specific protocol has already been completed for ***Guyana***, and in 2009, this was further developed into a training package, with accompanying trainer's guide, activities booklet and PowerPoint slides, which have all been made available to the country.

During the year, **Guidelines for Detection, Prevention and Treatment of Iron Deficiency Anaemia in Children** were also drafted for ***Anguilla***. These guidelines, which are under review, are intended to help health care workers to implement effective screening and management procedures for the prevention and control of iron deficiency anaemia in children from birth to 12 years old through use in health centres and schools. The guidelines take into account current programs and recent research and international recommendations which apply to children, and place emphasis on screening, supplementation and use of iron-rich and fortified foods as well as public health measures such

as control of parasites.

Nutrition Displays

Nutrition messages along various themes were promoted through displays at expositions and conferences throughout the year. These include:

- Ministry of Agriculture's Production and Marketing Organization Conference at Trelawny Multi-purpose Stadium, ***Jamaica***.
- Ministry of Agriculture and Fisheries' Corporate Wellness Program celebration at the Ministry of Agriculture head office, Hope Gardens, ***Jamaica***.
- Display on food labelling and the sugar and salt content of commonly eaten foods at the official media launch of Caribbean Wellness Day at the office of the Prime Minister of Jamaica.
- Display on *Careers in Nutrition and Dietetics* at National Science and Technology Exposition at the University of Technology, ***Jamaica***.
- World Food Day Display at Garvey Maceo High School in Clarendon, ***Jamaica***. The theme was *Achieving Food Security in Times of Crisis.*

Promotion of Young Child Nutrition

Capacity building for implementing recommendations of the Global Strategy for Infant and Young Child Feeding remained the main focus of technical cooperation activities related to the improvement of young child nutrition. Support was given in the following areas: development of national policies on infant and young child feeding; introduction of the new WHO child growth standards; and, training of trainers with regard to equipping health workers with knowledge/ skills for counselling and assisting mothers with adopting recommended feeding practices.

Development of National Infant and Young Feeding Policy

In ***Jamaica***, CFNI participated in discussions on the revision and updating of the draft national Infant and Young Child Feeding Policy. The 1-day multi-stakeholder consultation involved small group discussions on specific sections of the draft document. Pertinent issues from the group reports were discussed in the plenary session and a broad consensus reached on a number of proposed policy actions. CFNI also participated in a small working group with members of the national Infant and Young Child Feeding Committee to prepare the revised draft of the policy document. After a final review by the Committee, the document will be submitted for Cabinet approval.

CFNI assisted the National Infant and Young Child Nutrition Committee of the Ministry of Health in ***St. Vincent and the Grenadines*** with planning and conducting a national consultation for the development of their Infant and Young Child Feeding Policy. Participants included personnel from Ministries of Health, Education, and Finance, the Department of Gender Affairs, Community Health Services, representatives of the National Association of Early Childhood Educators, Medical, Nursing and Pharmacist Associations and the St Vincent Save the Children Fund (VINSAVE). After presentations on the situation on young child nutrition in the country and the Global Strategy for IYCF, the participants, in working group sessions, reviewed IYCF practices and current policies and programs with a view to identifying areas for improvement. They also defined objectives for the policy and priority strategies/actions for achieving these objectives. In addition, they made recommendations on responsibilities for policy implementation, mechanisms for monitoring and evaluation and strategies for mobilizing resources in support of policy implementation.

Introduction of the New WHO Child Growth Standards

Preparations for the introduction of the new WHO Child Growth Standards remained a major focus of child health services in many countries. In collaboration with the PAHO office for the Eastern Caribbean, CFNI assisted the Ministries of Health in ***Antigua and Barbuda, Barbados, Dominica, Montserrat*** and ***St. Vincent and the***

Grenadines in planning and conducting workshops for trainers. Participants included nutrition and dietetic personnel, supervisors from hospital and community health services, nursing tutors, coordinators of early childhood development programs in the Ministry of Education and technical officers from the Ministry of Health. The workshop agenda included presentations on the development of the new growth standards, demonstrations of measuring techniques followed by practice by the participants, and practical exercises on the plotting and interpretation of growth trends and counselling mothers. Each participant received a copy of the training manual which was developed to guide health workers in the use of the revised records. In the final workshop session, training plans were discussed with the participants who were expected to conduct training for the other health and child care workers in their respective work settings.

Similar workshops were also conducted in ***Jamaica*** and ***Guyana***. In ***Jamaica***, nutrition and dietetic personnel as well as public health nurses attended the 4-day training program. As part of the roll-out of training for the introduction of the revised child health records country-wide, tutors in health training institutions in ***Guyana*** were trained by CFNI in the plotting and interpretation of the new child growth standards.

Upgrading Skills for Protecting, Promoting and Supporting Appropriate Infant and Young Feeding Practices

A 2-day workshop on the International Code of Marketing of Breastmilk Substitutes was conducted in ***St. Vincent and the Grenadines*** in collaboration with the National Infant and Young Child Nutrition committee. Participants included medical and nursing personnel, community health nursing supervisors, community nutrition officers and personnel from early childhood development/education services. The objectives of the workshop were to explain the objectives, scope and provisions of the International Code and the ways in which the marketing of breastmilk substitutes can undermine the effectiveness of breastfeeding promotion efforts, and to identify practices in local settings which were in violation of the Code.

Twenty-four participants including public health nurses, supervisors of early childhood centers and nutrition and dietetic personnel attended a training workshop conducted by CFNI in collaboration with the South West Regional Health Authority, ***Trinidad and Tobago***. The training program was aimed at upgrading participants' knowledge on recommended infant and young child feeding practices; and improving skills in monitoring key aspects of nutrition services in day care and early childhood centres. The agenda included presentations on important aspects of young child nutrition and practical exercises which focused on the application of theoretical principles.

Training activities were also conducted under the extension phase of the Government of Guyana/ Inter-American Development Bank (GOG/IDB) Basic Nutrition Program. A 2-day workshop was conducted for tutors from the three nursing schools and the University of Guyana. The workshop focused on the knowledge/skill areas that health workers require for counseling and supporting mothers in improving young child feeding practices. CFNI also conducted a workshop on maternal and young child nutrition for physicians working in primary care services in ***Guyana***. Topics discussed in presentations and case study discussions related to strategies for improving nutrition in pregnancy and lactation; scientific evidence on the benefits of exclusive breastfeeding, and the application of principles of lactation management; the development, use and interpretation of the new WHO child growth standards; and the recommended protocol for prevention and management of iron-deficiency anemia in maternal and child health services.

Another related activity under the Basic Nutrition

Program in ***Guyana*** was the preparation of five instructional videos on topics related to young child nutrition which will be used in health training institutions.

Regional Nutrition Competitions

2009 Caribbean Schools' Food & Nutrition Quiz Competition

The objectives of the quiz competition were:

1. to improve the image of food and nutrition within the region;
2. to promote good nutrition and healthy lifestyles in schools and communities; and
3. to help students in their preparation for local and regional examinations in Food and Nutrition.

Twelve countries participated in the preliminary rounds (up to Semi-finals) of the 2009 competition which was conducted on October 21 – 22, 2009 through the University of the West Indies (UWI) Open Campus facilities which allowed direct contact with eleven of the twelve participating countries. CFNI provided funding support for the team from ***Turks and Caicos Islands*** to access the UWI Open Campus system via the telephone.

A list of the 12 national teams, and the schools and countries they represented, is shown in Box 1.
The preliminary rounds were conducted on a knock-out basis as follows: Round 1; Round 2 and Semi-finals. An outline of the proceedings up to the Semi-Final round of the compe-

Box 1: List of National Teams/Countries participating in the Caribbean Schools Food and Nutrition Quiz Competition, 2009

- Albena Lake Hodge Comprehensive School, ***Anguilla***
- Clare Hall Secondary and Christ the King High ***Antigua & Barbuda***
- Queen's College, ***Bahamas***
- Christ Church Foundation School, ***Barbados***
- Sacred Heart College, St Viator High School & Orange Walk Technical High , ***Belize***
- Bregado Flax Educational Centre & Elmore Stoutt High School, ***British Virgin Islands***
- Bishop's College (Carriacou), ***Grenada***
- St Catherine High School, ***Jamaica***
- Vieux Fort Comprehensive, Leon Hess Comprehensive, St Joseph's Convent and Castries Comprehensive, ***St. Lucia***
- Barrouallie Secondary, Emmanuel High, Bequia Community High School, St. Joseph's Convent (Kingstown), ***St. Vincent & the Grenadines***
- Bishop's High School (Tobago), ***Trinidad & Tobago***
- HJ Robinson High School, ***Turks and Caicos Islands***

CFNI's Kimberly Ashby-Mitchell (left) conducts the coin toss for the start of the Caribbean Schools Food and Nutrition Quiz Competition Finals in Kingston Jamaica.

tition is given in Box 2.

The finals of the 2009 competition took the form of a face-to face contest which was staged on Monday, November 16, at the Mona Visitors Lodge and Conference Centre, Kingston, ***Jamaica***. The two finalist teams from ***British Virgin Islands*** and ***St. Lucia,*** along with their coaches were awarded a free trip to ***Jamaica*** to take part. Approximately 250 students and teachers from secondary schools in ***Jamaica*** were there to witness the contest, which was videotaped for circulation to audiences around the region.

The team from the ***British Virgin Islands*** took the lead early, scoring 120 points to their opponents' 80 points in the first round. In the second round, St Lucia scored 190 to the ***British Virgin Islands'*** 250. The last round ended with the ***British Virgin Islands*** scoring 75 points and ***St. Lucia*** scoring 90 points. The team from the ***British Virgin Islands*** emerged victorious in the 2009 Caribbean Schools Food and Nutrition Quiz Competition, defeating ***St. Lucia*** 445 to 360.

The individual champion of the 2009 competition was Claudine Martinez from Orange Walk Technical High School, ***Belize.***

Evaluation questionnaires were sent to all focal/ contact persons in participating countries seeking their views on the organization and conduct of the

The winning team from The British Virgin Islands along with their coaches, Mrs. Heida Joyles-Selwood and Mrs. Camille Gumbs pose with the first prize trophy, book and medal prizes.

Box 2: Summary of the proceedings of the 2009 Caribbean Schools' Food & Nutrition Quiz Competition – up to the Semi-Final Round

ROUND 1: 12 Teams
At the end of Round 1, the four lowest scoring teams were eliminated. The eight teams going forward were:

Belize – 11 points
British Virgin Islands – 11 points
Grenada – 11 points
St. Lucia – 11 points
St. Vincent – 10 points
Turks & Caicos Islands – 10 points
Antigua – 9 points
Bahamas – 8 points

At the end of Round 1, four students participated in tie breakers before Claudine Martinez from Orange Walk Technical High School, Belize emerged victorious with the highest individual score to become the Individual Champion of the competition.

ROUND 2: 8 Teams
The scores at the end of Round 2 were:

St. Lucia – 9 points
Antigua – 8 points
Belize – 8 points
British Virgin Islands – 8 points
Bahamas – 7 points
Grenada – 7 points
St. Vincent– 5 points
Turks & Caicos Islands – 4 points

The teams from Bahamas, Grenada, St. Vincent and Turks and Caicos Islands were eliminated and the four other teams moved on to the Semi-final.

SEMI-FINAL ROUND: 4 Teams
The scores at the end of this round were:

British Virgin Islands - 6 points
St. Lucia - 6 points
Antigua - 5 points
Belize – 4 points

The team from Antigua emerged as the third place winner. The teams from British Virgin Islands and St. Lucia moved on to the final round.

2009 competition. Seven persons completed the questionnaire. The feedback received indicated that respondents were generally satisfied with the organization and conduct of the competition and thought that the standard attained should be maintained in the future. They also made some useful suggestions for future improvement of the competition.

In addition to CFNI, the Dominica Coconut Products and the Caribbean Association of Home Economists (CAHE) were the main sponsors of the 2009 Caribbean Schools Food & Nutrition Quiz Competition.

2009 Caribbean Nutrition Promotion Competition

The objectives of the competition are:

- To provide visibility to exemplary projects or activities aimed at improving food and nutrition.
- To promote the sharing of information on efforts to improve food and nutrition in the Caribbean.

A call for entries was issued in the first quarter of the year. This was in the form of a promotional brochure in which the rules of the competition and guidelines for submission of entries were outlined. The brochure was disseminated throughout the countries served by CFNI.

Eleven entries were received from 9 countries, representing a range of governmental and non-governmental agencies and organizations. It is of note that three entries were received from Grenada. The title of entries and the agencies making the submissions are listed in Table 4.

The judges of the competition were: Professor Julie Meeks-Gardner, Nutritionist/Director, Child Development Centre, Ms. Clare Forrester, Social Communication Consultant and Mrs. Beverly Lawrence, Food Policy Analyst, CFNI. Entries were judged on the following criteria: relevance of objectives; creativity; appropriateness of communication strategies and channels; and achievements/impact in relation to stated objectives.

As in previous years, a variety of projects were submitted both in terms of the topics addressed and the types of activities undertaken. A range of communication approaches was utilized and activities were implemented in different settings, targeting various population groups. The judges were impressed with the level of networking and partnership building strongly evident in submitted entries. They also commented on the clearer definitions of objectives and target groups. But they remained critical of the limited information provided on impact assessments. The judges' comments on the

Individual champion, Claudine Martinez, of Orange Walk Technical, Belize collects her trophy from Ms. Cynthia Perriel-Clarke (CAHE Representative)

Mrs. Julie Augustin-Charlery (centre) and her team from St. Lucia proudly accept the 2nd place trophy from Dr. Gillian Smith, Assistant Representative, FAO

individual entries were shared with the respective agencies or organizations in order to improve the planning of food and nutrition-related interventions.

Sponsorship support for the 2009 Competition was provided by Jamaican firms: Manpower & Maintenance Services Ltd.; Specialised Offset Services Ltd. and WB Trophies Ltd.

The first, second and third place award winners of the 2009 Caribbean Nutrition Promotion Competition were:

1st Place:
"Healthy Lifestyle Challenge – Take Charge of Your Health" Submitted by Ms. Maunelva Taylor, Ministry of Health, ***Montserrat***

2nd Place :
"Wellness Promotion" Submitted by Dr. Christine LaGrenade, Ministry of Health, ***Grenada***

3rd Place :
"Taking Control – Diabetes Program" Submitted by Mrs. Julian Rowe, National Nutrition Centre, ***Barbados***

Special awards were also given to two entries. These were:

Special Award for Creativity:
"National Rap Competition", submitted Mrs. Pretha Wilson, Family and Consumer Sciences Department, ***Bahamas***

Special Award for Impact:
"Wellness Promotion" submitted by Dr. Christine LaGrenade, Ministry of Health, ***Grenada.***

The Awards Ceremony

Table 4: Nutrition Promotion Awards Entries - 2009

Name	Organization	Country	Project Title
Ms. Maunelva D Taylor	Ministry of Health	Montserrat	Take Charge of Your Health
Mrs. Lynette Sampson/ Mrs. Rosemary Anatol	The Informative Breastfeeding Service (TIBS)	Trinidad and Tobago	Celebration of World Breastfeeding Week
Mr. Fitzroy James/ Mr. J. A. Roderick	Marketing & National Importing Board	Grenada	Grenada Mango Fest 2009 – It's all about mangoes
Mrs. Julian Rowe	National Nutrition Centre	Barbados	Taking Control – Diabetes program
Mrs. Pretha Wilson	Family and Consumer Sciences Department	Bahamas	Nutrition Rap Competition
Ms. Althea Georges	Clare Hall Health Centre	Antigua	Changing Time, Change me
Mrs. Mondelle Squires-Francis	Grenada Co-operative Bank Ltd.	Grenada	Fun Walk – Pump it Up/ Health Extravaganza
Dr. Christine LaGrenade	Ministry of Health	Grenada	Wellness Promotion
Mrs. Phillipa Barry	BVI Health Services Authority	British Virgin Islands	Healthy Eating and Active Living: Beware of Trans Fats
Mrs. Vernice Battick	Primary Health Care Department	Anguilla	National Breastfeeding Week
Mrs. Merlyn Severin	Ministry of Health	St. Lucia	Observance of World Kidney Day 2008/2009

The awards dinner provided the forum for highlighting the accomplishments of the winners of the two regional nutrition competitions. The function was held on Wednesday, November 18, 2009 at the Terra Nova Hotel, Kingston, ***Jamaica***, and was attended by a multi-sectoral gathering including food and nutrition planners and practitioners, education and health personnel, teachers and schoolchildren.

In his opening remarks as chairperson of the evening's proceedings, Dr Fitzroy Henry, Director, CFNI, welcomed the guests and offered congratulations to the winners in both competitions. He thanked the sponsors who had faithfully supported the activities over the years and reminded the audience about the objectives of the regional competitions and their continuing relevance to efforts towards improving food and nutrition in the region. The Director also praised the contributions of the teachers and other resource persons in all participating countries who organize the national quiz competitions in preparation for participation at the regional level.

Representatives from CFNI's three main partner agencies in the UN system, the United Nations Children's Fund (UNICEF), the Food and Agriculture Organization (FAO) and the Pan American Health Organization (PAHO) also brought greetings on behalf of their respective organizations.

Over and above the prize trip to ***Jamaica***, the final-

Ms. Maunelva Taylor of the Ministry of Health,Montserrat receiving her prize from Dr. Fitzroy Henry, Director, CFNI for the winning entry in the 2009 Nutrition Promotion Competition.

ist teams and the individual champion of the Caribbean Schools' Food and Nutrition Quiz Competition received trophies, cash awards, medals and book prizes, as well as a tour to places of interest in ***Jamaica***. The third place winners were also awarded a trophy, cash prize and books. Coaches of the individual champion and the first, second and third place winners received cash awards, while book prizes were given to the twelve teams that participated in the regional competition. Copies of the DVD of the final round of the competition will also be distributed to all countries.

Students in performance at the Awards Ceremony

The winner of the top award in the Nutrition Promotion Competition was awarded a prize trip, to attend the specially convened awards ceremony in ***Jamaica***. The sponsored prize also included hotel accommodation, a trophy, cash prize and a tour to places of interest in ***Jamaica***. Awards to the other winners included trophies, plaques and cash prizes.

Nyam News and Cajanus

Nyam News Issues Disseminated to Member Countries in 2009

The themes addressed were:

1. Physical Activity

Recognizing that diet and physical activity are the twin pillars of a healthy lifestyle. Seven issues of Nyam News were dedicated to this topic on physical activity during the publication period.

The first Nyam News article in the series sought to define physical activity, present the benefits of engaging in physical activity and present some recommendations. Physical activity refers to any bodily movement produced by the skeletal muscle that increases energy expenditure above the basal level. It includes such activities as walking, aerobics and weight lifting. While the term physical activity is often used interchangeably with exercise, there is a difference between the two. Exercise is a sub-category of physical activity that is planned, structured, repetitive and purpose driven.

- The health benefits of physical activity include:
- Building of lean muscle and reducing fat
- Improving overall energy level
- Improving strength and endurance
- Strengthening of bones and joints
- Reducing anxiety and stress
- Increasing self esteem
- Preventing disease.

It is recommended that everyone should start by doing moderate physical activity for at least 30 minutes, most or all days of the week. Sedentary persons may start slowly with short periods of activity and gradually increase the level and duration over time. While engaging in physical activity, it is important to keep its three components in mind – frequency, intensity and time (FIT).

As a follow up to the first issue on Understanding Physical Activity the second issue continued the series by showing how physical activity can be promoted.

Physical activity should be promoted at the individual, community and national level and in both formal and informal settings e.g. at school and community meetings. The general public can be reached via the mass media or by the use of posters, flyers and brochures. While fitness clubs and gyms have gained popularity in the past few years, trained instructors who can give proper guidance is essential to ensure that injuries are avoided, especially by those who are new to the world of structured exercise.

When planning a physical activity promotion campaign we must consider the psychological barriers that must be addressed – perception of body image, lack of confidence, absence of immediate rewards. Physical activity should be promoted to the extent that persons with negative perceptions can feel comfortable with it and are encouraged to include it in their daily lives. In the promotion of any exercise program, everyone should be encouraged to set goals that are achievable.

Subsequent issues of Nyam News looked at the relationship between physical activity and chronic disease:

(a) Obesity – Obesity has become a major public health concern in the Caribbean and is known to decrease life expectancy in both children and adults. It affects more than a quarter of the adult population, particularly our women.

Lack of physical activity is a clear and significant contributing factor to obesity. Normal regulation of body weight occurs when energy input is equal to energy output. The control of obesity is a lifelong undertaking and to make the most effective use of physical activity in the fight against this condition must become a way of life. Physical activity affects body composition and weight in that it promotes the loss of fat while preserving lean body mass.

(b) Cancer – Cancer is one of the leading causes of death in the Caribbean. Some of the more well-known are breast cancer, prostate cancer, cancers of the colon, cervix, stomach, rectum and lung cancer.

There is a body of evidence which suggests that physically active women have up to 40% reduced risk of developing cancer. There is also a positive association between breast cancer and obesity. Physical activity and exercise are therefore important keys in reducing breast cancer through the role they play in fighting obesity.

Individuals who are physically active can also reduce their risk of developing colon cancer by 40-50%, with the greatest reduction in risk among those who are most active. Additionally some studies have found that physically active persons may have a 30-40% reduced risk of developing lung cancer. Results of the relationship between physical activity and prostate cancer are inconsistent. While several studies indicate it is probable that physical activity decreases the risk of developing prostate cancer by 10-30%, others have found no evidence to support this finding.

While we may not know exactly what physiological mechanisms can reduce the cancer risk in our bodies, it seems clear that increasing our level of physical activity is a wise strategy.

(c) Diabetes – The incidence of diabetes continues to increase in the Caribbean. Studies have shown that exercise and a healthy diet can prevent the development of Type II diabetes in people with Impaired Glucose Tolerance (IGT) and in persons with "pre-diabetes".

Physical activity may prevent the onset of Type II diabetes because it improves general fitness and cardiovascular endurance, lowers blood pressure and lipids; and because it helps reduce total body fat, specifically intra-abdominal fat distribution – a known risk factor for insulin resistance.

Studies in several developed countries suggest that moderate reduction in weight and walking each day for half an hour reduces the incidence of diabetes by more than half in overweight individuals. Thus, regular physical activity is a primary preventive measure for individuals who may be susceptible to the condition.

Persons with Type I diabetes must, however, exert caution when engaging in physical activity. The most common problem they may encounter during exercise is hypoglycaemia (low blood sugar level), which can occur during, immediately after, or many hours after physical activity. However, depending on the nature of the activity and its timing relative to the individual's meal and insulin schedule, hypoglycaemia can be prevented.

Some information that persons with diabetes should bear in mind with regard to diabetes and physical activity include:

- Ensure blood glucose monitoring equipment is available at all physical activity sites
- Check blood glucose levels as required
- Be prepared to treat hypoglycaemia
- Drink extra water as hydration is important.

(d) Cardiovascular Disease – the major cardiovascular diseases include coronary heart disease, cerebrovascular disease, hypertension, heart failure and rheumatic heart disease.

Regular physical activity prevents or delays the development of high blood pressure and reduces blood pressure in people with hypertension. Physical activity can also lower blood cholesterol levels which will eventually decrease the risk of developing cardiovascular disease.

Physical inactivity is a major risk factor for heart disease and stroke and is linked to cardiovascular mortality. Studies have shown that people who modify their behaviour and start regular physical activity after heart attack have better rates of survival. Thus, individuals who already have heart disease are recommended to engage in regular physical activity (exercise).

The risk of developing heart disease e.g. angina or heart attack is remarkably reduced in people who are physically active when compared to sedentary individuals.

A physically active lifestyle reduces the risk of sudden cardiac deaths, even among persons with advanced coronary arteriosclerosis.

In the final issue of Nyam News in the physical activity series, the main evidence for the various health indicators was collated and the influence of physical activity on improving health and well-being and therefore quality of life emphasized.

2. The Impact of Select Vitamins, Minerals and Foods on Health

Several articles were dedicated to address the impact of certain key vitamins, minerals and foods on health.

(a) Vitamin E and Your Health – Vitamin E belongs to the group of fat-soluble vitamins, i.e. it dissolves and remains in the fatty tissues of the body. Vitamin E, is in fact, a term for a mixture of eight compounds which can be classified into two sub-groups – tocopherols and tocotrienols. The most common and most active of these in the body is alpha-tocopherol. Vitamin E is primarily derived from plant sources.

Vitamin E functions as an antioxidant and helps prevent oxidative stress by working together with other food substances such as vitamin C, glutathione, selenium and vitamin B3 in an attempt to regulate overactive molecules.

Studies have shown that vitamin E:

- Protects the skin from UV light when applied externally (to the skin);
- Appears to prevent the formation of blood clots and so prevents heart attacks;
- Protects and ensures permeability of the capillary system, protects vitamin A and essential fatty acids from oxidation in the cells and prevents breakdown of body tissues.
- Stimulates the body's immune response.

However, supplementation with too much vitamin E on the other hand may interfere with the action of vitamin K and high doses taken daily over a long period has been found to increase the risk of death.

(b) Chromium and Your Health – Chromium is one of the most common elements that exist in the environment. Naturally occurring dietary chromium is found in a variety of foods e.g. meats, dried beans and spices. It is an essential nutrient with very low toxicity.

There is no recommended dietary allowance for chromium. However, adequate intakes have been established. Chromium's primary function is in carbohydrate and lipid (fat) metabolism. It is thought that it is the active component of the Glucose Tolerance Factor (GTF). Chromium's role appears to be in improving insulin sensitivity thus aiding in preventing insulin resistance. Chromium may also play a role in fat and cholesterol metabolism by lowering LDL levels while increasing concentrations of apolipoprotein A, a component of high density lipoprotein cholesterol (HDL).

Supplementation with chromium has been found to reverse insulin resistance and signs of diabetes in persons being intravenously fed. However, supplements should be taken with caution as chromium interacts with some

medications, especially if they are taken on a regular basis. Possible toxicity can also result if consumed in excessive amounts.

(c) **Cranberries and Your Health** – Cranberries are scarlet red, tart berries that grow widely in Europe, Asia and the United States. In the Caribbean however we rarely encounter the fresh fruit and our interaction with cranberries is usually limited to the juice, drink or the dried fruit.

Cranberries are low in saturated fat and sodium and are a good source of vitamin C.

Some of the strongest scientific evidence related to the health benefits of cranberries is linked to its ability to reduce the risk of urinary tract infections. They reduce the risk of bladder infections by acidifying the urine and preventing bacteria from sticking to the walls of the bladder.

While cranberries do provide some other benefits, they also contain measureable amounts of oxalates which when concentrated in body fluids can crystallize and cause health problems e.g., oxalate kidney stones and impaired calcium absorption.

(d) **Sugar and Your Health** – Sugar refers to a class of carbohydrates made up of one or two molecule structures or units. Monosaccharides e.g. glucose, fructose and galactose are the simplest sugars and the final breakdown products of carbohydrate digestion in humans. Among the disaccharides, sucrose is the most common but other examples include lactose and maltose.

There are both physiological and commercial uses of sugars. Glucose is the body's main source of energy. Commercially, sugar is used in foods to enhance flavor and appeal.

Many sugary foods and drinks are often low in other nutrients and provide little satiation. Excessive consumption of these energy dense foods encourages further eating to satisfy perceived needs and actual functional requirements. This increases the likelihood of indiscriminate eating leading to weight gain and obesity.

A few tips for reducing sugar intake include:

- Reading food labels and choosing less sweet alternatives.
- Reducing the amount of sugar added to beverages.
- Using more fruits and less sugar in cakes.
- Choosing sweet snacks less often.

(e) **Coffee and Your Health** – The coffee beverage is made from coffee berries that are picked when ripe then processed and dried. The coffee beans are roasted and used to make the coffee in beverages and other foods. Coffee impacts on health in a variety of ways:

It contains a highly active anti-cancer compound which is believed to boost the activity of the enzymes thought to prevent colon cancer.

Although the evidence is weak, coffee has been reported to reduce the risk of Alzheimer's disease, gall bladder and gallstone disease, Parkinson's disease and Type II diabetes.

It is thought that the caffeine in coffee blocks a receptor in the liver giving it a protective property against liver disease.

Caffeine acts as a diuretic and as a laxative. This has led to its use in enemas for colon cleansing.

Caffeine is a stimulant and is widely used as a means of staying awake. It also affects the central nervous system. Studies show that significant amounts of caffeine can lead to constipation, high cholesterol levels, anxiety and sleep changes. It can also cause irritability in some individuals with excessive consumption and even withdrawal symptoms.

Overall, coffee consumption should be no more than two cups per day to minimize the possible adverse effects of the caffeine.

(f) Herbs, Food and Health – A two part series about the food and medicinal uses herbs.

In the first issue we examined how herbs are used in foods and medicine, their nutrient content and some tips to ensuring that they are used safely.

Colloquially herb is a broad term referring to various parts of plants that are useful to humans. But, strictly speaking, herbs are the leaves of certain plants that grow in temperate climates used for flavouring while spices are the buds, fruits, flowers, bark, seeds and roots of plants, many of which grow in tropical climates.

Herbs are generally added during food preparation to improve the taste of cooked dishes making them more palatable. Herbs may be used fresh or dried, whole or ground.

Most herbs contribute very little, if any calories, or nutrients. However, there are a few herbs that may contribute a significant amount of vitamins and minerals e.g. thyme is an excellent source of iron, manganese and vitamin K, chives are rich in vitamins A and C and dill seed is a good source of calcium.

At present there is renewed interest in the use of herbal remedies. While herbal remedies may relieve the symptoms of some disorders and conditions, they have not been shown scientifically to cure them. Tips for when using herbs as food or medicine include telling your doctor the herbal products or over the counter drugs you are using to avoid drug interactions and not using herbal medicines as a replacement for medication prescribed by your healthcare provider to treat serious medical problems such as cancer, diabetes or heart disease.

The second Nyam News issue on herbs detailed the traditional use of specific herbs as medicines to help the public better understand their purported biological or medicinal benefits.

(g) Green Tea and Your Health – Green tea originated in China and is prepared from the leaves, leaf buds and internodes of the tea plant Camellia senensis.

Green tea contains nutrients such as vitamin C and alkaloids including caffeine which give it a stimulant effect.

Green tea has been reported to:

- Protect against a range of cancers e.g. cancers of the lung, prostate and breast, by inactivating oxidants before cell damage occurs, reducing the size of tumors and inhibiting the growth of cancer cells without harming healthy tissue.
- Play a role in weight loss by increasing metabolic rates and speeding up fat oxidation.
- Control blood sugar levels in diabetic persons. Studies also suggest that there may be a link between tea drinking and reduced risk of Type II diabetes.
- Help to inhibit the growth of bacteria that cause bad breath and tooth decay.
- The possible negative effects about green tea center around its high fluoride content which could cause neurological damage, renal damage, osteoporosis, arthritis and other bone disorders.

3. Highlights of Specific Foods

Three Nyam News issues were devoted to specific food items. These food items were:

(a) Cheese – Cheese is a commonly consumed food in the Caribbean that is made from the curdled milk of cows, goats, sheep or other mammals.

There are three basic steps that are common to all cheese making. First, proteins in milk are transformed into solid lumps called curds. Second, the curds are separated from the milky liquid, called the whey, and shaped or pressed into molds. Finally, the shaped curds are ripened using a variety of aging and curing techniques.

Cheese can be classified based on moisture content, ripening methods or whether they are natural or processed.

Cheese is a concentrated source of protein, vitamins and minerals, as well as fat and cholesterol. The fat and cholesterol content, however, varies depending on the milk used. Cheese is a calcium-rich food, providing 20-25% of the daily amount needed to build and maintain bone mass. Its inclusion in the diet is also said to reduce the risk of osteoporosis, help regulate blood pressure, reduce the risk of colon cancer development and reduce symptoms of premenstrual syndrome.

(b) Chocolate – The bitter seeds/beans of the cocoa are used to make chocolate. The cocoa bean is 31% fat of which 60% is saturated. Two-thirds of the fat is in the form of stearic acid and the remainder is in the form of oleic acid. The protein from the cocoa plant is rich in the essential amino acids tryptophan and phenylalnine as well as tyrosine. There are many different types of chocolate: unsweetened chocolate/bitter chocolate, bittersweet/semi-sweet chocolate, sweet chocolate (dark), milk chocolate and white chocolate.

The underlying reasons for chocolate cravings are not clearly understood but are believed to center around:

- Its taste, smell and texture which are related to its high fat and sugar content.
- Its link to pleasurable physiological and psychological sensations.
- Its role in balancing low levels of neurotransmitters that work in the regulation of mood, food intake or compulsive behaviours.
- Its association with monthly hormonal cycles and mood swings in women.

So far, studies involving chocolate have suggested that its health benefits are derived from its flavanoid content. Flavanoids are reported to have potential beneficial effects on human health including anti-viral, anti-allergy, anti-inflammatory and anti-oxidant effects. Usually, however, chocolate is implicated in many conditions e.g. acne, dental caries, and migraines. Evidence for these remains inconclusive. However, it should be noted that chocolate does have a role to play in a healthful diet as it can offer some health benefits, but it is high in calories due to its high fat content and should be consumed in moderation and also chosen wisely.

(c) High Fructose Corn Syrup – High fructose corn syrup (HFCS) is a sweetener made from corn and is found in numerous foods and beverages. The "high fructose" in the name of the product refers to a higher fructose content than corn syrup, which contains only glucose. It is produced by converting cornstarch to a syrup with high dextrose (glucose) content. Conversion of much of this glucose to fructose results in a syrup with a structure similar to sucrose (table sugar), and which is called high fructose corn syrup.

It is estimated that food companies purchase HFCS at prices up to 70% less than sugar. In addition to its cheap cost, HFCS is purported to enhance the natural flavours of many beverages, fruit fillings and dairy products, while maintaining their freshness and flavour.

Since the emergence of HFCS as a sweetener in many foods, consumption of the product has drastically increased. At around the same time as this increase, the prevalence of obesity has doubled – Is HDCS to blame? It is safer to say that the increase in HFCS consumption has contributed to the obesity

epidemic, just like any other refined sugar consumed in large amounts. HFCS gives the same effect as sucrose (normal table sugar) in the sense that if you eat too much of it you will accumulate too much calories in an unbalanced way. Moderation is the key and it is recommended that we consume sugars and sweets sparingly. Consumers should therefore be watchful, read food labels for sugar in any form and choose a balanced diet with foods from the six Caribbean food groups.

4. Eating to Live or Living to Eat

Our desire to eat is not just governed by hunger but also by the body's control system, environmental influences, emotional factors, social influences, health status, medication and sensory aspects.

Hunger and appetite both encourage eating. Hunger is an inborn stimulus – the physiological need to eat. Appetite, on the other hand, is a learned response which is usually associated with sensory aspects of food. The feeling of fullness after we have eaten usually lasts for a while. This feeling of fullness is what is called satiety. Hunger, appetite and satiety are the three main factors that determine whether we eat to live or live to eat. We need to let hunger have greater influence on our eating behaviours and stop eating when we are full.

(Our bodies were made with sensitive systems that prompt us when to eat and when to stop eating.) After we have identified the situations that cause us to eat, we can modify our responses to those situations so that we eat in response to hunger and not other external factors.

5. Healthy Eating Amidst Rising Food Prices

There is no doubt that households in the Caribbean are currently experiencing challenges in the area of dollar management in light of the impact of global occurrences that are affecting food prices.

To ensure good nutrition, food selection should be based on using a variety of foods in the six Caribbean food groups. One way of helping to balance food expenditure and still pay attention to your health is to return to home gardening. In this way, savings from not purchasing whatever you grow can be used to help purchase what you need.

To avoid wastage, consumers should always bear in mind the quantity as well as the value of food items needed so that each family member will get suitable amounts according to their needs. Some helpful tips are:

- Plan before you purchase.
- Prepare a shopping list and stick to it.
- Use food labels to compare brands, weight, price and nutrient content of foods before making the decision to purchase.
- Use peas and beans more often and reduce the amount of meat.
- Purchase less convenience foods and eat out less often.

6. Gluten Intolerance

Gluten is a protein commonly found in grains such as wheat, barley and rye. Gluten is a dairy-free, sodium-free, cholesterol-free, fat-free protein alternative that may be used by vegetarians.

When dough made with wheat flour is kneaded, the gluten formed contributes to the viscosity and ability of the mixture to extend, stretch, or rise, once a leavening agent is present. The more developed the gluten, the chewier the product such as pizza and bagels, while less developed gluten gives tender baked goods e.g. cookies.

Gluten intolerance is a broad term that describes a disorder in which some persons may suffer from abdominal pain, bloating or diarrhea when they eat certain specific foods. The immune system detects gluten as a threat and puts its defensive mechanism into action by producing antibodies to get rid of the foreign element. The antibodies that are produced attack the lining of the small intestines.

Once someone has gluten intolerance it is virtually incurable but it can be controlled. The treatment is to completely remove gluten form the diet. Food items that do not contain gluten include ground provisions, rice, corn, tapioca and peas, beans and nuts.

7. Calcium: Beyond Bones

Calcium is an essential nutrient and the most abundant mineral in the body. It is found in a wide variety of foods e.g. milk, cheese, canned fish, beans and nuts. During the period of skeletal growth and maturation calcium accumulates in the skeleton resulting in increased bone mass.

Calcium serves several beneficial roles in the body:

- It is essential for muscle contraction.
- Calcium in nerve cells stimulates the release of neurotransmitters which carry impulses to target tissues.
- Calcium, vitamin K and a protein called fibrinogen help blood platelets to form clots.
- Calcium is needed for the action of enzymes which regulate chemical reactions essential for life.
- Findings from some clinical studies suggest that a diet rich in calcium and low in energy may play a role in the prevention and treatment of obesity as it leads to a greater reduction in body fat, specifically abdominal fat.
- Research also indicates that high dietary calcium intakes may help to prevent colon cancer as well as the recurrence of pre-cancerous colon polyps which may lead to colon cancer.
- There is evidence that calcium may have a role in the regulation of blood pressure and that supplemental calcium decreases the severity of pre-menstrual symptoms (PMS).

8. Fortified Water

Fortification is the addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients. Fortified water, also known as enhanced or functional water, has been modified to incorporate not only nutrients but also other dietary factors such as fruit and vegetable extracts, electrolytes, herbal supplements, caffeine and antioxidants.

Some of the benefits of fortified water are that it encourages persons to be hydrated and is able to replace electrolytes lost after 60 minutes or more of high intensity physical activity. Noteworthy too is the fact that at the 1992 International Conference on Nutrition (ICN), among the strategies recommended to alleviate micronutrient deficiencies was the fortification of water with necessary micronutrients when feasible, if existing food supplies fail to provide adequate amounts in the diet. Consumers, though, must be aware that many of these waters are sweetened using sugar and can contribute to health problems such as high blood sugar levels.

Overall, the decision to regularly consume fortified water is a personal choice and one that should be made only after knowing all the accurate facts.

CAJANUS Issues Disseminated to Member Countries in 2009

1. *New Child Growth Standard*

The article "The New WHO Child Growth Standard" explains why these standards were needed, reviews the methodology and results of the Multicentre Growth Reference Study (MGRS) from which the standards were developed and outlines the status of implementation in the Americas. The following article "The WHO Multicentre Growth Reference Study: Planning, Study Design and Methodology" provided insights into the complexity of the MGRS and the challenges faced in conducting the project of this nature. This article provided an overview of the different phases of the project from its inception in 1990 to its expected completion in 2010.

Guidelines for the implementation of the new growth standards at country level are outlined in a report of the Technical Advisory Group (TAG) convened by CFNI and the Office of the Caribbean Program Co-ordination (OCPC/PAHO) in November 2005. The recommendations focused on replacement of the existing Growth Charts as well as increased attention to improving the quality of child health services.

A brief review of the progress in implementations of some of the key recommendations of the Global Strategy for Infant and Young Child Feeding endorsed by the World Health Assembly in 2002 is also included in this issue. This review emphasizes the need for renewed commitment to increased action for improving child feeding practices.

In this context, a short extract by the WHO on "The Optimal Duration of Exclusive Breastfeeding: A systematic Review (Abstract)" was the final article in this issue of the Cajanus.

The news briefs in this issue covered a range of topics including foods marketed to children, fibre and magnesium intakes and the development of Type II diabetes, the impact of exercise on body fat in boys and girls, and dispelling the myth that breastfeeding creates sagging breasts.

2. *Gender, Obesity and HIV/AIDS*

The articles in this issue are derived from a study of the existence and effects of a number of social determinants on the chronic disease and HIV/AIDS risks of men and women in nine varied Jamaican communities. Quantitative and qualitative assessments of responses in interviews among 367 men and women focused on the importance of gender in relationships dynamics at household and community levels and the resulting effects on food intake, sexual relations and health risks.

The opening article covered the concept related to gender, sex and inequity in health. Elaborations on the social determinants of health including wealth and income and work were featured as well as gender as a social determinant of health, which was discussed extensively. This was followed by an article on the methodology used in the study emphasizing that a comparative approach (male vs. females) was taken to underscore the strength of gender as the predominant driving factor within the study population.

The findings of the study were presented in three articles. The first "Findings 1: Male and Female Patterns of Sexual Relationships" focused on the impact of socially constructed roles on male/female patterns of sexual relationships, sexual activity, relationship status and partnering and partner influences and sexual efficacies: male vs. female dominance.

The second article, "Findings II: Exposure and Vulnerability Especially of Women to HIV/AIDS and Chronic Diseases" covered the effects of media and entertainment, food purchase storage and safety, physical activity and televised immobility. "Findings III : Male Differences in Health Status, Perceptions and Health-Seeking Behaviours" discussed health-seeking behaviours, concepts of health and health behaviours, satisfaction with life, health status, obesity, nutritional status, perceptions and

satisfaction, the chronic diseases and sexual activity: a significant area of health risk.

The final article of this issue presented the conclusions and recommendations from this study including a call to refocus attention on gender norms specifically those that marginalize females.

3. *Public Policies in Agriculture for Health and Nutrition*

This issue of Cajanus presented the keynote presentations of The Symposium on Food and Agriculture Policies and Obesity organized by CFNI, in collaboration with the Food and Agriculture Organization (FAO). This symposium gathered several agriculture ministers, senior agriculture and food specialists in the region to identify clear guidelines on how agriculture/food policies can impact on obesity and NCDs through the availability of healthy foods, the behaviour of consumers to make healthy food choices and how these in turn can stimulate growth in the food and agriculture sectors.

The presentations were as follows:

- *How do Agriculture Policies Impact on Obesity and Non-Communicable Diseases: Experience from Other Countries* ~ Prakash Shetty (a visiting professor of public health nutrition at the Institute of Human Nutrition, University of South Hampton, United Kingdom, and editor-in-chief of the European Journal of Clinical Nutrition). Highlights included the drivers of lifestyle related diseases, the challenge of urbanization and globalization to food systems, food and agriculture policies that increase the risk of obesity and NCDs and food and agriculture policies that promote better health outcomes.

- *The Importance of Caribbean Agriculture Food Policies in Obesity Control* ~ Fitzroy Henry (Director, CFNI). Highlights included rethinking the agriculture/ food policy discussions on incentives that subsidize the production of local nutritious foods and policy recommendations.

- *Refocusing Agri-Tourism on Healthy Lifestyles* ~ Carolyn Hayle (Lecturer, UWI, Mona, Jamaica on sustainable tourism and marketing). Highlights included imperatives to refocus agri-tourism, changes and the Caribbean region, the wellness industry and understanding the global tourism system.

- *Food Trade, Food Security and Health in the Caribbean* ~ Deep Ford (Senior Economist and Leader of the Trade and Development Group in Commodities and Trade Division, FAO, Rome). Highlights included food security and trade linkages in the Caribbean, agriculture trade policy and food security, national and global policies changes and food security in the Caribbean and improved trade policy for the Caribbean.

- *Opportunities to Modify Agricultural Trade Policy in CARICOM to Counter the Rise in Obesity and Chronic Non-Communicable Disease* ~ Vincent Atkins (Senior Research Professional in the Agricultural Trade Negotiating Program of the Caribbean Regional Negotiating Machinery). Highlights included implications of the market access commitments for health, health implication of domestic support reduction commitments for Caribbean countries, health implications of the commitments on export subsidies for Caribbean countries and recommendations for policy actions.

4. *Food Based Dietary Guidelines*

This issue of the Cajanus highlights the efforts of several Caribbean countries that have developed guidelines that will encourage the selection, preparation and consumption of healthy foods. These Food Based Dietary Guidelines (FBDGs) focus on risk reduction and health promotion and are expected to not only guide the general public but also the development of food policy and nutrition education programs.

Articles in this issue discussed the rationale for the FBDGs as well as provided a background for their development in the Caribbean. An explanation of

the guidelines and the process of developing the FBDGs are also explored in subsequent articles.

The reader is shown pictorial renderings of select FBDGs in Caribbean countries as well as examples of the promotional materials developed for the FBDGs by some countries. A table is used to highlight the common messages between countries; this complements the article highlighting the key recommendations of the FBDGs for Caribbean Countries.

The article preparation and use of Food based Dietary Guidelines discussed the underlying assumption for FBDG, key principles for their development including the nutrition concepts and also the implementation, preparation and the use of FBDGs.

News briefs continued the theme of FBDGs by highlighting stories from St Vincent and the Grenadines and Guyana. Other topics covered included "Obesity Linked to Fat not Calories" and "Stress Promotes Abdominal Fat".

Part II

CFNI Development

Mrs. Janice Welch, PAHO Long Service Awardee (2nd left) poses with Dr. Carol Boyd-Scobie (3rd left), PAHO/WHO Representative, Trinidad and Tobago, and other staff of the Trinidad and Tobago Representation.

Miss Paula Trotter accepts her PAHO Long Service Award from Dr. Leahcim Semaj, guest speaker at the PAHO/CFNI Awards Luncheon, Kingston , Jamaica

Miss Sharon Locke, PAHO Long Service Awardee, listens attentively as Mr. Marlon Martin reads her citation at the PAHO/CFNI Awards Luncheon, Kingston , Jamaica

CFNI Development

Staff

The staff complement for the Institute stationed in Jamaica and Trinidad and Tobago comprised the following for 2009:

Technical Staff:	11
Administrative Staff:	18
Total:	**29**

Please see Organization Chart – Annex 1.
Three PAHO consultants were recruited in 2009 to assist with the technical cooperation program of the Institute. These were Dr. Candace Simpson-Smith located at the Trinidad Centre and Misses Kimberly Ashby-Mitchell and Renelle Aarons located in ***Jamaica***.

The Institute contracted several persons to assist with the technical program. The areas of assistance included the CFNI/IDB project, World Diabetes Foundation project, Trinidad and Tobago School Meals Project, food security and health promotion.

Security

CFNI, as a UN office, is expected to comply with the UN's Minimum Operating Security Standards (MOSS) developed for Jamaica. In order to meet some of these requirements, the following documents were produced in 2009:

- Business Continuity Plan
- CFNI Office Safety and Security Manual
- CFNI Emergency Evacuation Plan.

Business Continuity Plan

In 2009, CFNI developed a Business Continuity Plan (BCP) with the capacity to maintain continuity of highly critical operations during, and subsequent to, a disaster and/or critical incident.

The Business Continuity Plan for CFNI included, among other things, information on:

- Processes during normal operation
- Processes and critical operational services
- Impact analysis matrix on critical processes
- Prioritization matrix on critical processes
- Mitigation strategies definition on critical processes weaknesses/implementation
- Critical Processes Management and Logistical Support Team.

A Crisis Management Team was formed which undertook the responsibility of steering the developmental process of the BCP.

Emergency Evacuation Plan

During the year in review, the Emergency Evacuation Plan (EEP) was finalized. It applies to all emergencies where employees may need to evacuate the building for personal safety and thus minimize threats to life and property. This EEP communicates the policies and procedures for employees to follow in an emergency situation. This Plan has been circulated to all employees.

Under this Plan, employees have been informed of:

- Preferred means of reporting fires and other emergencies
- Emergency escape procedures
- Procedures to account for all employees after emergency evacuation has been completed
- The alarm system.

Office Safety and Security Manual

This document outlines basic security procedures to be followed in the workplace and includes information on fire prevention, security issues to consider when working late, preventing fall injuries, preventing machine accidents, preventing cuts and punctures, earthquake, hurricane preparation and bomb threat procedures. It also contains key contact numbers for security personnel at the University of the West Indies, Jamaica, the UN Department of Safety and Security in Jamaica and a Communication Tree.

Staff Development and Achievement

Awards

PAHO Long Service awards were given to the following personnel in the year under review:

Mrs. Janice Welch, Administrative Assistant, (Trinidad)	–	30 years
Miss Sharon Locke, Director's Assistant	–	20 years
Miss Paula Trotter, Nutritionist	–	15 years
Mr. Rupert Burrell, Pressman	–	15 years

Training

Training activities included:

- Michelle Tappin-Lee and Jacinth Waugh:
  First Aid Training conducted by UNDSS, Jamaica
- All Staff:
  Functions and use of Elluminate (in-house)
- All Staff:
  International Public Sector Accounting Standards (IPSAS) Training (in-house)
- All Staff:
  Crime Mitigation Lecture by the UNDSS, Jamaica (in-house)
- Administrative Staff, Jamaica:
  Use of AMPES, Obligation creation and preparing documents for printing (in-house)
- Marlon Martin and Michelle Tappin-Lee:
  PAHO Procurement Workshop which highlighted new procurement policies of the organization conducted by Procurement Unit, PAHO, Washington.
- Sharon Locke:
  Human Resources Training conducted by HRM, PAHO, Washington.
- Enett Noble:
  Workshop on Electronic Digitization and Book Repair Workshop, Jamaica
- Candace Simpson-Smith: Nutrition and HIV/AIDS workshop for selected health care professionals in Trinidad and Tobago.
- Candace Simpson-Smith and Janice Welch:
  Training Workshop on Gender Mainstreaming in Health, Trinidad and Tobago.

Budget and Finance

The total operating budget for 2009 was US$2,444,393.00. See Annex 2 for further information on the breakdown of the budget by expenditure types.

Quota contributions from CFNI member countries totaled US$392,636.00.

Extra-budgetary funding accounted for 25% of the operating budget with a total of US$615,957.00.

The financial activities were carried out in accordance with the procedures and systems of the Pan American Health Organization. The terms and conditions of the grant agreements for the various extra-budgetary projects guided their expenditures.

Audit

The Institute was visited by external auditors from the National Audit Office, England, in December 2009. No major findings were reported and recommendations made will enhance operational efficiencies.

CFNI Building

The office building remains in good condition. Routine maintenance was carried out to building and equipment as required.

Information and Technology Services

During the year under review, the Institute's computer network was upgraded with new software and hardware provided by the Information and Technology Service Unit (ITS), PAHO Headquarters. Working through planned schedules with the ITS Unit, server, software and antivirus upgrades were successfully implemented. The table below lists the projects that were completed and some that are still underway.

The Institute acquired nine (9) Dell Optiplex 360 and two (2) Dell Optiplex 755 desktop computers as part of the organization's continuous replacement policy. This enabled the Institute to send two workstations to the CFNI Trinidad Centre. The Centre also benefitted from the acquisition of a new colour printer/scanner which replaced the old malfunctioning printer.

Library

Reference and User Services

Use of the Collection

The Library continued to provide users with a referral service in food and nutrition as well as current awareness services (bulletins, indexes) photocopy and internet printing facilities. Informational materials on the CFNI website further increased user access to CFNI information resources. The CFNI Trinidad Centre, also maintained from the Jamaica Centre collection, provides similar services. Groups (high schools, University, medical and nursing students) as well as several individuals visited the library during

PROJECT/UPGRADES	STATUS
Hardware Virtualization Project • Exchange 2007, including most recent version of GFI Anti-spam and Symantec for Exchange software • Windows 2003 Domain Controller • Terminal Services Servicer	In progress; working with ITS to complete.
Symantec 11.0 Endpoint Protection (Antivirus/Anti-spyware Software Upgrade)	In progress; waiting on ITS to complete
Firewall Analyzer 6.0 Software Upgrade	Completed
WHO Identity Management System (WIMS)	Completed instructions received and waiting on WHO for the next steps.
Firewall VPN	Completed

the period under review, to conduct research including the use of the CFNI periodicals (Cajanus and Nyam News). The volume of user visits are indicated by the statistics included in this report.

Journals' binding has upgraded the library stock for the period with 25 volumes of bound issues.

Composition of User Community

This year the library records showed 818 reference visits were made to the library as shown in Table 5.

Table 6 shows user visits for the major categories of users, over the 5-year period, 2005 – 2009, a total of 4,171 exposures.

The majority of the users were UWI, UTECH, and the nursing schools including UWI School of Nursing (UWISON), high schools' students and teachers ' colleges. Other users included health practitioners, nutritionists, schools of catering and members of the public. Combined with the current awareness monthly bulletins of new material, the library's services have also been heavily utilized by national public health personnel, personal health enthusiasts and persons with nutrition-related chronic diseases. The CFNI library offered several school groups' tours of the library facilities for 2009, as part of library's services. The groups researched for examination preparation at the CXC and CAPE levels. The following schools were among the visiting and tour class groups this year: Ardenne High School, Holmwood Technical High School, St. Andrew Technical High School, St. Hugh's High School, Vere Technical High School, Portmore Community College and Bridgeport High School.

Direct requests from the CFNI community focused on the topics: food composition, obesity and weight management, diabetes and chronic non-communicable diseases, food security, meal planning, infant nutrition, nutrition-related diseases and health, food and culture, food composition, food groups, food safety, indigenous recipes, dietetics, eating disorders (esp. obesity, micronutrient deficiencies), nutraceuticals, vegetarianism, alternative medicine, macronutrients, medicinal plants.

Table 5: Reference Visits to the Library for 2009

Institution/Entity	No. of Participants
University of the West Indies (UWI)	170
University of Technology (UTECH)	114
Northern Caribbean University (NCU)	1
Mico University College	15
Teachers' Colleges	8
High Schools	105
Health Personnel: • Ministry of Health • Nurses	 11 176
Others and telephone/email requests: (e.g. vocational schools, other government departments, individuals, etc.)	78

Table 6: User Visits' Distribution of Major Groups for the 5-year Period (2005 – 2009)

Year	University of the West Indies	University of Technology	High Schools	Nurses	Teachers' Colleges	Others
2005	229	214	98	39	42	79
2006	185	200	161	42	46	174
2007	207	100	192	39	96	500
2008	226	163	167	50	45	95
2009	170	114	105	176	8	78
Total 5-yr.	**1,017**	**791**	**723**	**346**	**237**	**926**

Further, from existing reference resources subject bibliographies and reference guides (library pathfinders) have been supplied to user clientele.

CFNI staff utilized the reference research facilities and the new journals received by the library. Interns and assistant consultants made good use of the retrospective nutrition research resources maintained in the library collection.

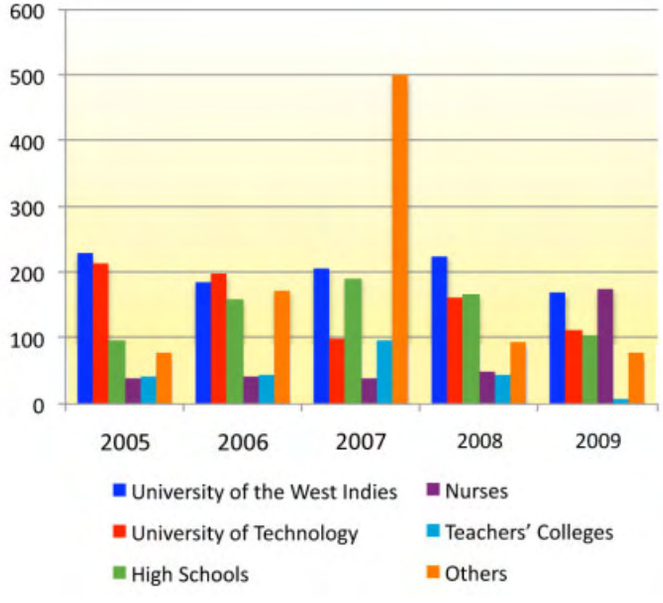
Information Outreach

Public information was enhanced by displays mounted in 2009 (30 displays). Exhibitions and displays for the year also increased public awareness on the importance of nutrition to lifestyle practices; in various cases, in support of health ministries' activities.

The Library participated in the displays and other community events with provision of educational resources and materials. In October, one very successful out-of-town display was presented at the Garvey Maceo High School to celebrate World Food Day. Other successful display events were the 4-H Clubs (Denbigh, Clarendon) and UWI exhibitions.

The library provided presentations to visiting health groups, several large high school groups and the public in an endeavour to strengthen and enhance the function of information provision to the user community.

CFNI Website



The CFNI website carried issues of Cajanus 2007 and Nyam News to 2008. The new activities of the schools' competitions, food-based dietary guidelines and information on the new CARPHA are now available for access on the site. Website URL: http://www.paho.org/cfni.

UWI Network

The Library was participant in the launch of a UWI Library Network in March 2009, by the UWI Library Public and Outreach Services. The purpose of the network was to open shared resources between the libraries located on the Campus in the areas of:

- Fostering co-operation
- Duplication avoidance
- Shared training opportunities.
- Standardization of cataloguing and book processing
- Facilitate access to the facilities of the UWI Library services
- A manual to be compiled on paraprofessional training, copyright and uploading
- Aim for teams on digitization, internet work, user education, cataloguing.

New Title Acquisitions

A total of five hundred (500) new items including journals, books and pamphlets updated CFNI's collection this year. New Journals Bulletins/New Books Bulletins are regularly issued to facilitate user research.

Materials Production Unit

CFNI TECHNICAL PUBLICATIONS

NAME OF PUBLICATION	NO. OF COPIES
Cajanus • Vol. 39, No. 4, 2006 • Vol. 40, No. 1-4, 2007	1200 each
Cajanus Index • Vol. 39, 2006 • Vol. 40, 2007	1200 each
Nyam News • October – December 2007 • January-December 2008	1500 each
Body Mass Index Chart – large (Reprint)	500
Flyer: Call for Entry – Caribbean Nutrition Promotion Awards Competition, 2009	500
Flyer: Call for Entry – Caribbean Schools' Food and Nutrition Quiz Competition, 2009	500
Caribbean Nutrition Promotion Competition Brochure	800
Face to face finals 2009 Caribbean Schools Food & Nutrition Quiz Competition	100 each
Growth Charts – Boys and Girls	60 each
Report on 2008 Caribbean Nutrition Competition	106
Food Composition Tables for English-speaking Caribbean (Reprint)	200
Recommended Dietary Allowances for the Caribbean (Reprint)	200
Implementing Agriculture and Food Policies to Prevent Obesity and Non-Communicable Diseases (NCDs) in the Caribbean	250
Healthy Eating and Active Living: 40 Small Changes to Make a Difference (Reprint)	500
Booklet: Sponsors of CFNI's 2009 Regional Nutrition Competitions, 2009	110
Booklet: Strength for Flexibility	870
Booklet – Simple Exercises for Health	870
Booklet – Student Behavioural Booklet	850
Key Nutrients in Food	210

NAME OF PUBLICATION	NO. OF COPIES
Posters: • What Do you See? • Which Do I Choose? • Are you Active Enough? • The Boy • The Girl & The Nurse • Food Label	35 copies each
Handouts: • Getting the Facts: Tips for Identifying Credible Sources of Nutrition Information • The Girl & The Nurse • What to Eat • My Meal – Lunch • My Meal – Supper • My Meal – Dinner • My Meal – Breakfast • A Story About Breakfast	 875 875 875 875 875 875 1750 875
Poem: Meals	870
Picture Cards (10) – Popular Caribbean Dishes	35 copies each
Definition Strips (5) – Aerobic Capacity, Muscle Strength, Muscle Endurance, Flexibility, Body Composition	35 copies each
Definition Strips (2) Fad, Fallacy	20 copies each
Activity Card (8) – Balance Food	35 copies each
Worksheet 13 – Balancing Food and Activity	900
Worksheet 14 – My Food Recall	900
Worksheet 15 – Personal Reflection Balancing my Food and Activity	900
Worksheet 16 – Effects of Nutrient Deficiencies	900
Worksheet 17 – Personal Reflection: The Foods I Eat	900
Worksheet 18 – What to Eat?	900
Worksheet 19 – Factors Affecting My Choice of Foods	900
Worksheet 20 – Why do I make these food choices?	900
Worksheet 21 – Personal Reflection: My Choice of Foods	900
Worksheet 22 – Assessing Caribbean Meals	900
Worksheet 23 – My Activity Recall	1740
Worksheet 24 – Personal Reflection My Activity	900
Worksheet 25 – Planning My Activity	900

NAME OF PUBLICATION	NO. OF COPIES
Worksheet 26 – Assessing my Physical Activity Plan	900
Worksheet 27 – Personal Reflection: How Do I Feel About Me	900
Worksheet 28 – My Health Habits	900
Worksheet 29 – My Meals	900
Worksheet 30 – Personal Reflection: A Closer Look at the Foods I Eat	900
Worksheet 31 – Parts of a Label	900
Worksheet 32 – Looking at Food Labels at Home	900
Worksheet 33 – Personal Reflection: Getting the Facts	900
Worksheet 34 – Did you have breakfast Today?	900
Worksheet 35 – A Story About Breakfast	900
Worksheet 36 – My Breakfast Food Record	900
Worksheet 37 – Personal Reflection: How do I feel about breakfast?	900
Worksheet 38 – Our Caribbean Athletes Keeping Fit	900
Worksheet 39 –Personal Reflection: Keeping Fit	900
Worksheet 40 – Evaluating My Activities	900
Worksheet 41 – Monitoring Types of Physical Activity	900
Worksheet 42 – Monitoring the types of physical activity I engage in	900
Worksheet 43 – Engaging Support for my activity contact	900
Worksheet 44 – Personal reflection maintaining physical activity	900
Worksheet 45 – To which food groups do these foods belong?	900
Worksheet 46 – Finding out about the foods that I eat	900
Worksheet 47 – 24 Hour Food Recall	900
Worksheet 48 – Personal Reflection: "Getting Variety without excess fats, salts and sugars	900
Worksheet 49 – Marcy's Concern	1200
Worksheet 50 – Personal Reflection: My sources of nutrition information	1200
Worksheet 51 – Factors that affect daily consumption of food	1200
Worksheet 52 – Tally Sheet 1: Classification of Factors that influence your daily consumption of food	1200
Worksheet 53 – Tally Sheet 2: Classification of food choices by food groups	1200
Worksheet 54 – Family food survey	1200

NAME OF PUBLICATION	NO. OF COPIES
Worksheet 55 – Personal Reflection: Factors influencing my food choices	1200
Worksheet 61 – Grouping of foods for breakfast	900
Worksheet 62 – Breakfast Plans	900
Worksheet 63 – Personal reflection "My Choices for Breakfast"	900
Worksheet 67 – Vitamin and Mineral Content of Fruits and Vegetables	900
Worksheet 68 – My Fruit and Vegetable Recall	900
Worksheet 69 – Personal Reflection: How Often do I eat fruits and vegetables	900
Worksheet 70 – Design a poster	1200
Worksheet 71 – Personal reflection: A Closer look at my fruit and vegetables intake	1200
Worksheet 74 – Ways to reduce salt and fat	1200
Worksheet 75 – Design a Poster	1200
Worksheet 76 – Personal reflection: Reducing my salt and fat intake	1200
Worksheet 80 – Snacks and beverages at the canteen and vendors	1200
Worksheet 81 – Snacks and beverages made at home	1200
Worksheet 82 – Making a request for healthier snacks	1200
Worksheet 83 – Personal reflection: Making my snacks more nutritious	1200
Worksheet 84 – Personal Hygiene Chart	900
Worksheet 85 – Personal Reflection: "My Personal Hygiene Practices"	900
Worksheet 86 – My activity recall	1200
Worksheet 87 – Personal reflection: My aerobic capacity activities	1200
Worksheet 91 – Physical Activity Chart	1200
Worksheet 92 – My Moderate physical activity plan	1200
Worksheet 93 – Personal reflection: Maintaining moderate physical activity	1200
Instructions for Journal Entry (Teacher's Copy)	100
Fact Sheet – Natural and Processed Foods	900
Handout 1 – Fill in the Blanks	900
Teacher Self-Evaluation Form	600
Country Coordinator Observation Form	1000
Handout – Functions and Sources of Vitamins and Minerals	900
Handout – Reducing Salt and Fat in the Diet	1200

NAME OF PUBLICATION	NO. OF COPIES
Story – "Kizzie and Mom go shopping"	1200
Story: Rosemary Goes to Market	1200
WDF Posters – 1-8	30 each
Which Do I Choose - Poster	30 each
What Do You See – Poster	30
Exercise Posters (5) 35 each	175
Meals Posters	100
Lesson 12: Move for Health	40
Lesson 4: Getting it right	20
CFNI Farmers Conference Posters	23
Booklet – Enhancing Aerobic Capacity	50
Chart – Descriptions of PA	1200
Booklet – Warm up and Cool down Exercises	45
Booklet – Moderate Physical Activity	20
Game Cards Nutrients (17)	20 each
Tips for Identifying Credible Sources of Nutrition Information	1100
Handouts: • 5 ways to have breakfast daily • 5 ways to reduce daily intake of sugars • 5 ways to reduce daily intake of fats and salts • 5 ways to eat vegetables and fruits daily • 5 ways to eat a variety of foods daily • 5 ways to include a variety of physical activity daily • Moderate Physical Activities to do 60 minutes 5 days/week • Small changes to make a big difference	55 copies each
Enhancing Aerobic Capacity	60

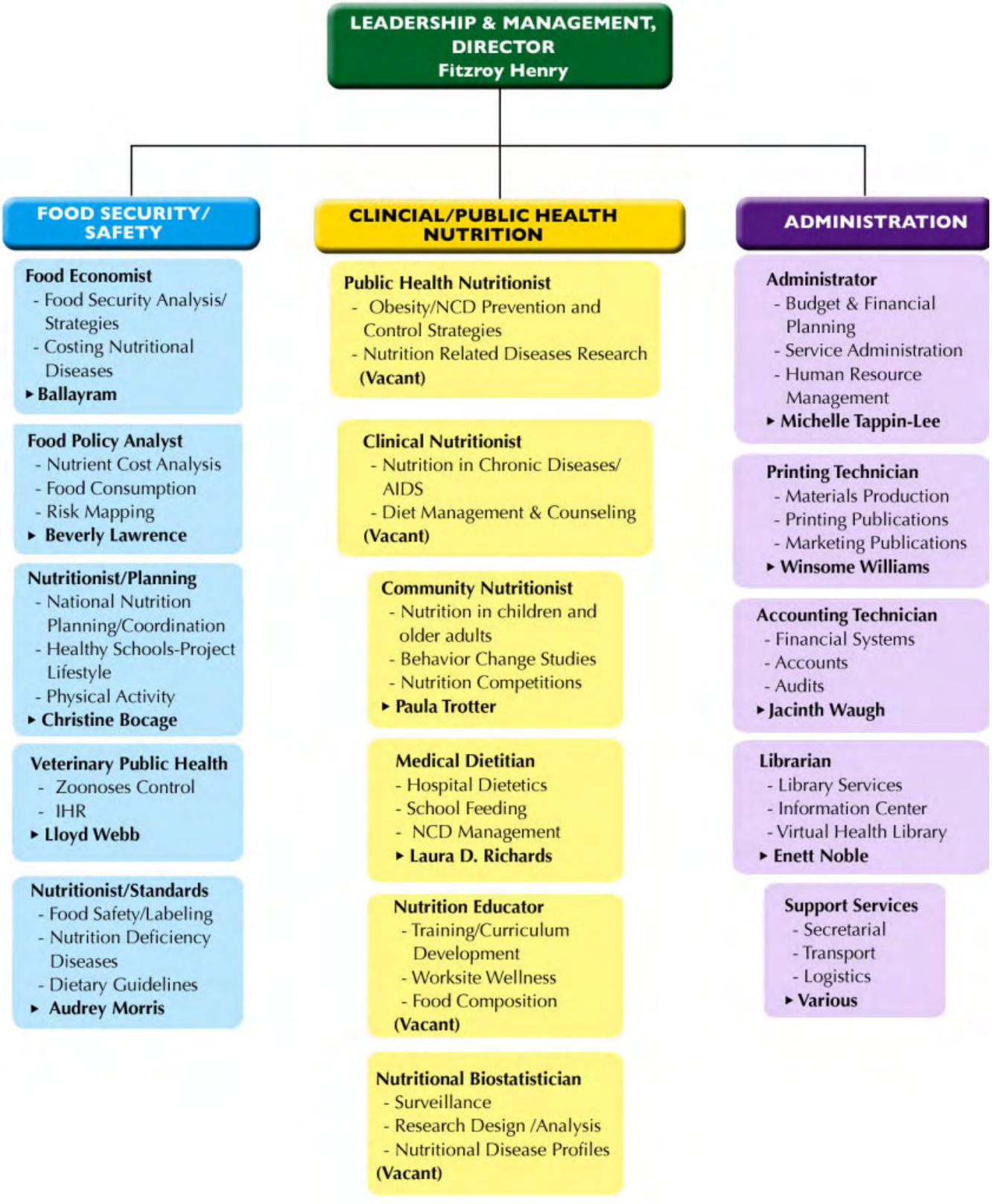
NON-CFNI PUBLICATIONS

NAME OF PUBLICATION	NO. OF COPIES
Printed for Inter-American Institute for Cooperation on Agriculture Office in Jamaica	
• 5 Business Cards	200 each
• Magazine – Inside IICA, June 2009	100
Printed for the International Seabed Authority, Jamaica	
• Selected Decisions and Documents of the Fourteenth Session [in English, Spanish and French]	1000
• Selected Decisions and Documents of the Fifteenth Session	
– English	500
– Spanish and French	250 each
Printed for Tropical Medicine Research Institute	200
• Jamaica Health and Lifestyle Survey II – Technical Report	
Printed for the University School of Nursing, Jamaica	
• The Caribbean Journal of Nursing and Midwifery, Vol. 4, May 2009	500
• Booklet – BScN Program Record of Clinical skills	200
• UWISON Students Handbook, Academic Year 2009-2010	300
Printed for the Violence Prevention Alliance	
• Booklet – Educational Materials Handbook: A Guide for Facilitators	200
Printed for the Nurses Association of Jamaica	
• Booklets – Eleventh & Twelfth Gertrude Swaby Memorial Lectures	400 each
• Booklet – Inaugural Mary Seacole Memorial Lecture	400
Printed for the Ministry of Health, Jamaica	
• Practical Case Management of Common STI Syndromes (Reprint)	200
Printed for Grace Kitchens	
• 40th Anniversary Logo	1,500
Printed for the Jamaica Association of Professionals in Nutrition and Dietetics:	
• Flyer – Healthy Lunch Bag: Ten best tips	500 each
• Flyer – Picky Eaters: A Guide for Parents and Caregivers	
• Booklet – Feeding the School Age Chile (3-12 years old)	

PRE-PRESS DESIGNS	
Flyer	Caribbean Schools Nutrition Quiz Competition 2009: Call for entries
Flyer	Caribbean Nutrition Promotion Awards Competition 2009: Call for entries
Poster	CFNI Quiz 2009
Poster	My Personal Food Choices Tally Sheet
Comic Strip	Marcy's Concern
Poster	Food Security in the Caribbean
Poem	Meals
Poster	Lesson 17 – "My Personal Food Choices" Tally Sheet

Annex I

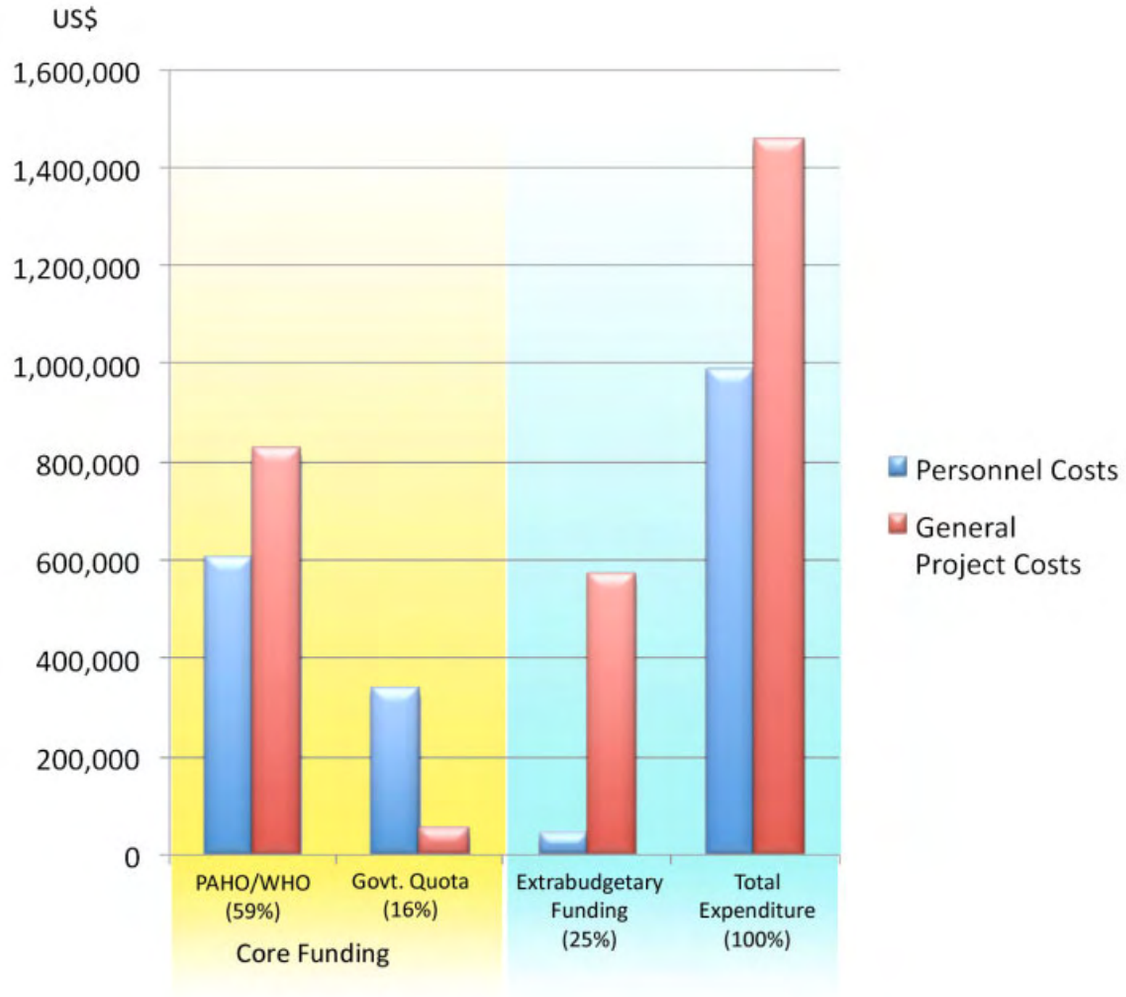
Organization Chart



Annex II

CFNI Operating Budget 2009 (US$)

Expenditure Type/ Funding Source	Core Funding		Extrabudgetary Funding	Total Expenditure	Total (%)
	PAHO/WHO	Govt. Quota			
Personnel Costs	606,400	340,007	42,378	988,785	40%
General Project Costs	829,400	52,629	573,579	1,455,608	60%
Total	**1,435,800 59%**	**392,636 16%**	**615,957 25%**	**2,444,393 100%**	**2,444,393 100%**



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