Food and Agriculture Organization of the United Nations

SUSTAINABLE APPROACHES TO AGRO-PROCESSING AND VALUE CHAIN DEVELOPMENT OF ROOT AND TUBER CROPS IN THE CARIBBEAN

February 2020

SDGs:	
Countries:	Antigua and Barbuda, Barbados, Dominica, Saint Kitts and Nevis, Saint Lucia, Suriname, Trinidad and Tobago
Project Codes:	TCP/SLC/3604
FAO Contribution	USD 491 000
Duration:	1 March 2017 – 30 June 2019
Contact Info:	FAO Subregional Office for the Caribbean FAO-SLC@fao.org

Implementing Partners

Ministries of Agriculture (MOAs).

Beneficiaries

MOA staff, farmers and agro-processors, including processing enterprises managed mainly by women.

Country Programming Framework (CPF) Outputs

Antigua and Barbuda - Output 1.4 (Food waste and food loss reduced along Value Chains), 1.7 (School Feeding Programme strengthened), 2.1 (Public purchase/procurement policy and programmes developed with the support of FAO, to support inclusion of small farmers), 2.2 (Livestock sector development supported to improve inclusion of small farmers).
Barbados - Output 2.3 (Production practices and productivity of farmers strengthened).
Dominica – Output 1.5 (National Agricultural and Food Systems Development Strategy for Dominica developed and implemented with the support of FAO), 3.3; (New or improved agricultural, forestry and fisheries practices evaluated and adopted with the support of FAO).
Saint Kitts and Nevis - Output 1.4 (Government institutions and value chain actors provided with FAO's technical assistance to support value chain development).
Saint Lucia – Output 3.2 (Programmes for the expansion and diversification of the agriculture sector toward value added goods and services and import substitution developed with the support of FAO, including agriculture and fisheries).
Suriname - Output 3.1 (Enhanced capacity for productivity and efficiency in selected value chains of family farmers, women, rural groups, and extension officers), 3.2 (Enhanced capacity for entrepreneurship for women, youth, family farmers, rural groups, and extension officers).
Trinidad and Tobago - Output 3.1 (Enhanced capacity for productivity and efficiency in selected value chains of family farmers, rural groups and extension officers).

Background

Root and tuber crops, grown in most islands of the Caribbean by smallholder farmers, are an important source of dietary needs and a regular source of income for many rural dwellers. Despite this, the full potential of root and tuber crops to contribute to poverty reduction and rural and economic transformation remains unexploited. Caribbean countries have recently embarked on a series of initiatives to exploit the potential of these crops and to use them as a key pillar in the reduction of food and nutrition insecurity, the high incidence of non-communicable diseases and the food import bill.
Current initiatives are based on the development of root and tuber crops and the intensification of processing to increase the number and types of value-added products and to enhance market opportunities. The aim of the project was to assist the seven participating countries to increase the utilization and marketing of selected root and tuber crops through exposure to new value-added options and improved processing technologies. One of its key functions was to serve as a pilot for innovative approaches and a catalyst for replication and expansion, with a focus on public purchase markets. Project activities addressed a broad range of stakeholders along the value chain, including producers, processors, millers, feed manufacturers and food service institutions. The project had four main outputs: improved production strategies; improved processing options; improved market linkages; and communication tools for root and tuber crops.

Impact

The project benefited both farmers and processors with new value-added products from roots and tubers. These, combined with the improvements made to existing products, successfully enhanced rural livelihoods.

Achievement of results

The anticipated outcome, that of building capacity to enable more inclusive and efficient commercially driven value chains to be established, was achieved through the establishment and facilitation of Value Chain Coordination Committees (VCCCs), the successful piloting of blended cassava bread and other value-added products, the provision of training to 128 participants in the development and management of the root and tuber crop value chain, the provision and demonstration of relevant equipment, the creation and dissemination of communication tools, and the establishment of linkages between producers (farmers) and buyers (processors). Fourteen short- to medium-term public-private partnership (PPP) opportunities were created as a direct result of the project.

Almost all of the envisaged outputs were achieved. This was a complex and challenging project to implement, with seven countries at different stages in their development of the roots and tubers sub-sector. The project provided the VCCCs with the necessary resources and impetus to create or upgrade the value chain for one product. The approach adopted by the project was to focus on this product and to fully support the prioritized product chain based on the needs identified by the VCCC. In this way, the project was not required to implement every activity in every country, but to ensure that all the actions taken contributed to the overall achievement of the desired result.

Implementation of work plan

With seven beneficiary countries, the inception phase of the project took almost six months, delaying the start of activities. In addition, in September 2017, Hurricane Maria caused large-scale devastation in Dominica, bringing activities to a halt for several months. The protracted process for the procurement of equipment further delayed actions on the ground. As a result, two no-cost extensions were requested and approved.

Activities were implemented well within the planned budget. During inception, the participating countries requested an increase in national-level actions and fewer regional actions, resulting in significant adjustments of the work plan. A budget revision during the second half of the project was requested and approved.

The Project Document identified three potential risks: natural disasters (hurricane, floods, droughts); pest and disease outbreaks, and the contamination of produce preventing market access. Of these, only the devastation caused by Hurricane Maria to Dominica impacted on the project. When the island began to recover, however, activities were gradually resumed and were completed in due course.

Follow-up for government attention

It is recommended that national strategies be established and implemented to sustain and build on the ongoing development of the sector using value chain and participatory approaches. In this context, efforts to promote and strengthen strategies linking value chains to public and private purchasing markets should be continued. Existing national mechanisms to coordinate the supply of goods to markets from smallholder farmers and agro-processors also need to be improved.

Sustainability

1. Capacity development

MOA was the lead coordinating agency in each participating country and gave its full support to project implementation. The MOA focal points also served as VCCC coordinators, thus becoming familiar with the value chain process, while VCCC members were enthusiastic and participated fully in the process. As a result, it is very likely that most, if not all, VCCC members will continue to support the networks and linkages established, as well as the work done under the project, thus contributing to the sustainability of the project results.

A good working relationship was initiated among the stakeholders involved in the project and the training activities. This should be fostered through the further engagement of these stakeholders in ongoing MOA programmes for the development of the root and tuber sub-sector.

2. Gender equality

Although the project did not specifically address gender, it ensured the equitable participation and access to benefits of women and men. Gender-disaggregated data on capacity-building activities were collected and women were targeted and were active participants in all technical training. In addition, the project specifically targeted the processing and marketing of value-added products, activities in which women generally play a key role in the Caribbean.

3. Environmental sustainability

The project design did not include explicit environmental sustainability issues.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project design did not include explicit human rights based activities.

5. Technological sustainability

As part of the co-finance provided to a larger project funded by the Caribbean Development Bank, specific equipment was donated under this project, primarily in the form of new or upgraded technology in the field production and value addition of cassava. The equipment was provided based on the specific needs identified by the VCCC and, based on the response received from the beneficiaries, successfully met the purposes for which it was introduced.

The project built local capacities for value chain establishment and the facilitation of networking and linkages among key stakeholders. Specific training improved the existing practices of value-chain actors. Support to improved design of infrastructure further assisted in this regard.

Several beneficiaries are already using the training and specific skills and equipment provided by the project to prepare and market their products. This is expected to continue well beyond the life of the project.

6. Economic sustainability

The mobilization of additional resources was not part of the project design. The development of roots and tubers is part of the normal MOA work programme and of some of the value chain actors who participated in this project, and it is anticipated that these persons will continue to do so in the foreseeable future. This should not incur any additional costs to the beneficiaries or stakeholders.

DOCUMENTS AND OUTREACH PRODUCTS

- Narrative Report. Letter of Agreement (LOA) 08 2019. St Lucia Bureau of Standards.
- Technical report. LOA 08 2019. St Lucia Bureau of Standards.
- Narrative report. LOA 019 2019. Inter-American Institute for Cooperation on Agriculture. IICA).
- Technical report. LOA 019 2019. IICA.
- Nutrient analysis of bread. Saint Lucia.
- Nutrient analysis of talouma and cassava flours. Dominica.
- Back-to-office report. Inception workshops. Suriname, 21-27 May 2017.
- Back-to-office report. Inception workshop. Saint Lucia, 15-18 May 2017.
- Back-to-office report. Inception workshops. Dominica, 26-29 June 2017.
- Back-to-office report. Inception workshop. St Kitts and Nevis, 3-7 July 2017.
- Back-to-office report. Inception workshop. Antigua and Barbuda, 3-7 July 2017.
- Back-to-office report. Inception workshop. Trinidad and Tobago, 27-30 August 2017.

- Back-to-office report. Council for Trade and Economic Development meetings. Guyana, 4-6 October 2017.
- Back-to-office report. Value chain training workshop and bakery demonstrations. Saint Lucia, Saint Kitts and Nevis, Suriname, Antigua, 30 October-23 November 2017.
- Back-to-office report. Rural invest training. Italy, 11-15 December 2017.
- Back-to-office report. Project planning meeting. Trinidad, 6-8 March 2018.
- Back-to-office report. Value chain training workshop. Trinidad and Tobago, 12-15 March 2018.
- Back-to-office report. Project implementation. Suriname, 25-27 March 2018.
- Back-to-office report. Agricultural exposition. Nevis, 21-23 March 2018.
- Back-to-office report. Project implementation meetings, FAO accountability workshop, value chain training workshop. Dominica, 9-14 April 2018.
- Back-to-office report. Project steering committee meeting and value chain committee meeting. Dominica, 14-17 January 2019.
- Back-to-office report. Food safety workshop, bakery demonstrations. Suriname, 28 February 2019.
- Back-to-office report. Food safety workshop and national secondary school culinary competition. 12-16 March 2019.
- Back-to-office report. Farmer-buyer forum. Trinidad, 24-27 March 2019.
- Back-to-office report. Food safety workshop. Antigua, 22-26 April 2019.
- Back-to-office report. Food safety workshop and bakery demonstrations. Dominica, 6-10 May 2019.
- Back-to-office report. Food safety workshop. Tobago, 26-28 May 2019.
- Presentation at the Caribbean Food Crops Society Meeting. 2017) Development of the roots and tubers value chain in Barbados. V. Extavour, A. Kellman and V. Lopez, FAO. Proceedings of the Caribbean Food Crops Society. 54:1-27. 2018.
- Good manufacturing practices – Suggested signage.
- Manual for root crops, Saint Lucia Bureau of Standards. June 2019.
- Guide for processing root crops, Saint Lucia Bureau of Standards. June 2019.
- Reduction of post-harvest losses in cassava and sweet potato along the food supply chain. Majeed Mohammed. June 2019.
- Training module on reduction of pre-harvest and post-harvest losses in cassava and sweet potato. Majeed Mohammed. June 2019.
- Factsheet on post-harvest management to reduce losses in sweet potato. Majeed Mohammed. June 2019.
- Factsheet on post-harvest management to reduce losses in cassava. Majeed Mohammed. June 2019.
- Factsheet on soil health for cassava production. Gaius Eudoxie. June 2019.
- Soil health management for root vegetables in the Caribbean. Gaius Eudoxie. June 2019.
- https://www.dominicavibes.dm/news-232642/. 28 June 2017.
- http://www.govt.lc/news/boosting-cassava-production. Marnus Cherry. 17 August 2017.
- https://wicnews.com/caribbean/st-lucia-hoping-to-boost-efficiency-of-cassava-processing-09144785/. 18 August 2017.
- https://www.stlucianewsonline.com/government-working-to-boost-cassava-production/. 19 August 2017.
- https://caricom.org/media-center/communications/news-from-the-community/boosting-cassava-production-to-improve-regions-food-security. 24 August 2017.
- http://www.looptt.com:8080/content/caribbean-region-suffers-low-cassava-production. 29 August 2017
- http://caricom.cubaminrex.cu/article/fao-invests-developing-caribbean-cassava-industry. December 2017.

- https://cpressrelease.com/cassava-blended-bread/. 5 February 2018.
- https://www.telesurenglish.net/news/Saint-Lucia-Boost-Cassava-Cultivation-to-Replace-White-Bread-20180210-0011.html. 10 February 2018.
- http://www.2030caribbean.org/content/unct/caribbean/en/home/news-centre/all-articles/fao-and-caribbean-development-bank-join-forces-for-trinidad-and-.html. March 2018.
- https://www.finanzas.com/empresas-y-directivos/pan-con-yuca-y-otras-armas-frente-a-la-invasion-de-alimentos-en-el-caribe_13795047_102.html. 2 March 2018.
- https://www.stlucianewsonline.com/secondary-school-exposition-to-promote-use-of-cassava-and-other-tuber-crops/. 11 March 2019.
- https://tinyurl.com/uhdukq6. Food safety workshop - Managing root and tuber crops. Tobago. 11 June 2019.
- Media report. Handover of mechanical cassava planter by FAO to Trinidad, 27 August 2019. https://www.facebook.com/AgricultureTT/posts/2059073874194160. http://www.news.gov.tt/content/faoun-hands-over-cassava-row-planter-ministry-agriculture#.XkVKKWhKiUk.
- Media report. Handover of equipment by FAO to Suriname – 27 September 2019. http://publicnieuws.com/2019/09/fao-overhandigt-equipment-aan-lvv-ter-ondersteuning-van-cassave-industrie/. https://www.sunews.nl/fao-overhandigt-us-30-000-aan-apparatuur-aan-lvv-ter-ondersteuning-van-cassave-industrie/.

ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	**The food and nutrition security status of the countries is improved by increased employment and income opportunities through the development of inclusive agribusinesses/enterprises**	
Outcome	MOA capacity to enable more inclusive and efficient commercially driven value chains established	
	Indicator	Number of roots and tuber value chains developed
	Baseline	In Barbados, Suriname, Saint Lucia and Trinidad and Tobago, coordination mechanisms (from previous root and tuber-related interventions) already existed. In the other three project countries (Antigua and Barbuda, Dominica and Saint Kitts and Nevis), no formal or operational coordination mechanisms linked small farmer production to processing entities and other markets (which mostly comprised a limited number of value-added products by small-scale to micro enterprises with little attention to food safety and quality issues).
	End Target	Root and tuber value chains in the seven project countries Twelve enterprises working under PPP agreements
	Comments and follow-up action to be taken	Four project VCCCs were set up, in Antigua and Barbuda, Saint Kitts, Nevis and Dominica. Existing coordinating mechanisms were utilized and further strengthened in Barbados, Suriname, Saint Lucia and Trinidad[1]. The inception workshops and subsequent training activities in the countries were conducted in a highly participatory manner. The VCCCs functioned with varying degrees of success for the implementation of in-country activities. The project VCCCs were set up specifically for the project but with the expectation of support, continuity and sustainability beyond the end of the project. However, despite receiving tacit endorsement by governments, they did not always have the authority to engage various stakeholders. The process was hands-on and facilitated ongoing engagement among the partners, limited to the identified focus products. It is recommended that national strategies be established and implemented to sustain and build on the ongoing development of the sector using value chain and participatory approaches. It is recognized that establishing PPP agreements takes time. Although the goal of 12 PPP agreements as the end target was not fully achieved, at least 14 short- to medium-term PPP opportunities were created as a direct result of the project interventions: – Trinidad and Tobago: a Farmer-Buyer Forum brought together four commercial buyers of cassava and approximately 80 farmers. As a result of this engagement, at least six farmers have become direct suppliers to the processors. – Barbados: One PPP arrangement was promoted, linking an agro-processor to a commercial bakery. – Nevis: There were three PPP engagements involving the Government Processing Facility, the school meals programme and two tourism/hospitality entities. – Saint Kitts: At least two PPP actions took place, involving the Government Processing Facility, which supplied grated cassava to the school meals programme for the production of bread, and between a supermarket and a commercial bakery for the evaluation of cassava bread. – Antigua: One PPP arrangement was established between a rural women's processor group and a bakery in the major supermarket and is now working well. – Suriname: one PPP opportunity was created, involving an indigenous women's group for supplying grated cassava to two commercial community bakeries. For these short- and medium-term arrangements to be transformed into sustainable long-term agreements, it is necessary to continue building on the relationships that have been created and to promote trust among the partners.

[1] Towards the end of the project, a VCCC was established in Tobago under a parallel project funded by the Caribbean Development Bank, *Cassava Development – Market Assessment Technology Validation and Transfer* (GCP/SLC/010/CDB) for Dominica, Suriname and Trinidad and Tobago.

Output 1	Government and value chain stakeholders are enabled to provide managerial support to promote and coordinate inclusive, efficient and sustainable value chains		
	Indicators	Target	Achieved
	Number of roots and tuber value chains developed	Root and tuber value chains in the seven project countries	Yes
Baseline	As indicated earlier, four countries (Barbados, Suriname, Saint Lucia and Trinidad and Tobago) had existing coordination mechanisms (from previous interventions). In Antigua and Barbuda, Dominica and Saint Kitts and Nevis, there were no formal or operational value chain coordination mechanisms.		
Comments	At the start of the project, four project value chains were created – one each in Antigua and Barbuda, Saint Kitts, Nevis and Dominica – and existing mechanisms were revived or extended to cover project activities in Barbados, Trinidad, Suriname and Saint Lucia. Towards the end of the project, a VCCC was also established in Tobago under a parallel project (GCP/SLC/010/CDB) to support ongoing activities, but the VCCC was only involved in the food safety activities of the current project. Hands-on value chain training was successfully conducted in the countries and its application was facilitated by committee members for one specific value-added product. Support was provided in the development of networking, linkages and relationships among key stakeholders and beneficiaries for the selected product. Despite several efforts (outlined in Activity 4.1 below), the opportunity to link with public markets such as the school meals programme and prison meals programme, was limited, as the VCCCs received only tacit endorsement at policy level. Efforts need to continue towards promoting and strengthening national policies and strategies, linking value chains to public and private purchasing markets. In addition, it is necessary to address the weak national production coordinating mechanisms to improve coordination of the supply of goods to markets from smallholder farmers and agro-processors. Implementation of existing operational frameworks at national level for central purchasing to supply public markets is the key to improving linkages of smallholder farmers with public purchase markets.		
Activity 1.1	Establishing a Value Chain Coordination Committee		
	Achieved	Yes	
	Comments	Countries identified key value chain actors for root and tuber development, and cassava and sweet potato as the commodities to be addressed by the project. The national focal point served as coordinator for the VCCC as well as for the implementation of activities. This caused some delays at times as a result of conflicts between the work programme of the MOA and activities to be coordinated on behalf of the VCCC. Each committee had an average of around eight members, representing farmers, small agro-processors and private sector-led markets. The national VCCC needs more than tacit endorsement by the Government in order to successfully coordinate root and tuber sub-sector development, and expand its training to support the expansion of market access. National policies are needed that empower the VCCC to coordinate activities, engage with stakeholders and partners, and eventually become independent for its activities and resources.	
Activity 1.2	Training of value chain facilitators in value chain development and upgrading		
	Achieved	Yes	
	Comments	A total of 128 value chain actors in the project countries received training in the development and management of root and tuber crop value chains; the workshops focused on mapping at least two value chains for either cassava or sweet potato. The eight focal points/VCCC chairpersons received guidance throughout the project. The project focused solely on the analysis of one value added product and not an industry strategy that would take into account multiple products and markets. One constraint was the limited time available to collect data and prepare detailed value chain analysis. Value chain training was conducted over a two-day period, with limited time spent on detailing the components required for the analysis. The regional project coordinator was only able to visit the chain actors twice during the course of the project. Her focus was on mentoring the national focal points and the VCCC for the identified activities. A more detailed value chain analysis of the root and tuber sub-sector is needed to pinpoint and address existing gaps. Mentorship mechanisms are recommended as a follow-up to value chain training sessions, with additional support from experienced, national agri-business persons.	

Activity 1.3	Documentation of the roots and tubers value chain at the start and end of the project	
	Achieved	Yes
	Comments	The value chain assessment conducted during the value chain training workshops informed the committee on actions required to address issues along the value chain. The project supported selected technical actions in the countries; the actions were endorsed by the VCCC. A full analysis was not possible at the end of the project. Several committees did not submit records of meetings, as, in many instances, emails and informal WhatsApp messages were used to exchange ideas and actions discussed during committee meetings. There is a need for the VCCC to appreciate the importance of recordkeeping that is specific to the value chain, information and documentation from VCCC meetings, and how the data is collated and shared in a timely manner for recordkeeping and accountability purposes.
Activity 1.4	Documentation of monthly meetings	
	Achieved	Yes
	Comments	Each VCCC appointed a secretary to record the minutes of meetings. FAO was not part of all meetings and did not receive regular documentation. As indicated above, communications and exchanges via less formal, virtual means, which often informed decisions at the VCCC, were undocumented. Project focal points provided monthly updates to MOA on the work of the committee as part of their work plans. It is necessary to identify mechanisms for documenting the informal communications used for VCCC discussions and decision-making.

Output 2	Farmers are provided with technical and managerial support for efficient production of roots and tubers		
	Indicators	Target	Achieved
			Yes
Baseline	Farmers in some project countries have access to technical support (e.g. training, production/technical factsheets, equipment and tools), but may not always know of it and therefore may not access and benefit from it.		
Comments	The current project provides co-finance to the parallel project funded by the Caribbean Development Bank, *Cassava Development – Market Assessment Technology Validation and Transfer* (GCP/SLC/010/CDB) in Dominica, Suriname and Trinidad and Tobago, specifically in the form of provision of equipment.		

Activity 2.1	Provision of equipment for on-farm demonstration	
	Achieved	Yes
	Comments	Three mechanical cassava planters were obtained from Planti-Center in Brazil for Suriname and Trinidad and Tobago. A technician from the company demonstrated the use and maintenance of the planters in both countries. In Dominica the project provided two walk-behind tractors and MOA held a demonstration to farmers in the use of the equipment. In addition, 21 semi-manual up-rooters were fabricated, based on an existing prototype, and seven up-rooters each were provided to Dominica, Suriname and Trinidad and Tobago. The MOAs in these countries are designing mechanisms to support access to the tools and equipment by farmers and farmer organizations. It is necessary to ensure that as many farmers as possible benefit from this service and that regular maintenance of the equipment is undertaken in a timely manner, so that it can last and remain in service for as long as possible.
Activity 2.2	Development of production plan for roots and tubers including crop rotation and cycle planning	
	Achieved	Partially
	Comments	A technical guide and a factsheet were developed by a soils expert from the University of the West Indies (UWI), Trinidad and Tobago, to inform farmers on soil care for cassava production, as well as soil management guide for root and tuber crops. Training could not be delivered in the technical application of the guidance document because of time constraints. MOAs in the project countries are encouraged to liaise with the UWI soils expert for queries or clarification and to utilize the guide and factsheet in their regular work, as well as for dissemination to farmers.

Output 3	Post-harvest handling of roots and tubers, inclusive of food safety guidelines and good agriculture practices, are applied		
	Indicators	Target	Achieved
			Partially
Baseline	Comprehensive guidelines covering GAP and food safety did not exist in the project countries.		
Comments	There is a lack of appropriate guidelines for post-harvest food safety for roots and tubers, as well as coherence of capacity-building activities, which have often taken a piecemeal approach.		
Activity 3.1	Updating food safety standards and labelling requirements		
	Achieved	Yes	
	Comments	A letter of agreement was issued to the Saint Lucia Bureau of Standard to develop a guide for root and tuber crop processing. Posters and GMP signage was also designed for agro-processors in Saint Lucia. A regional validation workshop could not be conducted because of the delayed implementation of the food safety workshops. The technical materials could not be printed owing to delays in finalizing the content. Printing of these materials and signage is required to ensure that beneficiaries have access to information regarding their production and processing operations, and will be pursued to the extent possible under other ongoing projects.	
Activity 3.2	Training farmers and processors in post-harvest (PH) handling of roots and tubers including GMP and food safety standards		
	Achieved	Partially	
	Comments	A technical PH guide for sweet potato along with factsheets for reduction of PH loss in cassava and sweet potato were developed by a PH specialist from UWI, Trinidad and Tobago, for farmers and agro-processors. The training activity could not be implemented following delays in finalizing the technical content. Food safety workshops, delivered to farmers and processors in five countries (Antigua and Barbuda, Dominica, Saint Lucia, Suriname, Trinidad and Tobago), focused on the reduction of microbial load and GMP. The workshops included the design of food safety management plans for small operations. In Barbados, technical assistance was provided to the private processor producing grated cassava to reduce the microbial contamination of tubers during processing. A key limitation to the process is the unavailability of local standards for processing at the National Bureau of Standards specific to roots and tuber crops. It is recommended that national (or regional) standards and guidelines be prepared and implemented in countries where roots and tubers are a priority for development. MOAs will be encouraged to liaise with the UWI PH specialist for queries/clarifications and to utilize the PH guide and factsheets in their regular work, as well as for dissemination to farmers.	
Activity 3.3	Training of farmers in animal feed production		
	Achieved	Yes	
	Comments	A regional workshop was hosted by FAO with two partners (IICA and Caribbean Agricultural Research and Development Institute), focusing on production and management practices for small ruminants. The three-day training session included technical training of farmers in the production of animal feed using mixed formulations containing local forage, and skins and peels generated from agro-processing. A limited validation trial was established but could not be completed owing to disagreements on data collection procedures among the key partners. It is necessary to plan and conduct validation trials using the local animal feed at the national level in order to establish appropriate guidelines for farmers and related business opportunities.	

Output 4	Agro-processors of roots and tubers are provided with technical support to establish sustainable and inclusive business models linking to public purchase markets		
	Indicators	Target	Achieved
			Yes
Baseline	Technical support services to small agro-processors and producers of roots and tubers is not readily available		
Comments	Small agro-processors need services such as nutritional analyses of their final product; audit/assessment/ evaluation of their processes and procedures; demonstrations for developing and preparing new products; and effective linkages among farmers and buyers, as well as among key stakeholders, to build relationships and trust.		
Activity 4.1	Facilitate meeting with public purchase markets		
	Achieved	Yes	
	Comments	Nutritional analyses were completed for blended cassava bread with and without whole-wheat flour for Saint Lucia processors. In Dominica, nutritional analyses were completed on samples of cassava flour, farine and talouma flour. The information was used to develop nutrition labels. Sugar content was assessed for 27 sweet potato varieties in Barbados to develop a consumer awareness chart. In carrying out this work, the need was identified to align local names with varietal names, based on the ongoing work of a UWI (Cave Hill) PhD student. A trained food technologist conducted a food safety assessment for the production of cassava-blended bread in Suriname in response to a request from the focal point: this highlighted the need for better sanitation in the bakery. Results and recommendations were presented to the focal point for follow-up. A review and audit was made for cassava flour production in Tobago. There is a need to separate the processing of animal product and non-animal products in the same facility. The facility lacks documented standard operating procedures (SOPs) and a food safety management plan. A report with recommendations was submitted to the authorities in Tobago. The VCCC held meetings with selected public purchase markets. Blended cassava bread was tested in the school meals programme in Saint Kitts and Nevis. In Suriname, bread preparation and tasting trials were conducted in prison kitchens. Meetings with the school meals and prison units were facilitated through the VCCCs. Representatives of various private sector markets were also invited to participate in the committee meetings. Bakery demonstrations were held in Dominica, Saint Kitts, Nevis and Suriname. Privately owned bakeries worked with focal points to evaluate consumer acceptance of the bread. In Suriname, bakery demonstrations were held with the national airline company and defence force. In Trinidad, the project supported the VCCC to host a farmer-buyer forum. This event featured 100 participants, with farmers and buyers sharing experiences with market requirements. Farmers and buyers also engaged in face-to-face meetings focusing on the supply agreements. This led to at least six agreements among farmers producing and harvesting cassava in accordance with the requirements of the processors/buyers, facilitating the linkage to new markets for their crops. The project facilitated a study tour to Tobago for 11 members of the Trinidad VCCC to hold discussions and exchanges with key stakeholders. They visited an ongoing cassava farmer field school and held meetings with farmers, processors and vendors of value-added products. Demonstrations were held on the process of making cassava farine and cassava bread.	
Activity 4.2	Provision of equipment for demonstration purposes		
	Achieved	Yes	
	Comments	Grinders for cassava were donated to facilitate the improved processing of cassava in three countries: Antigua and Barbuda, Suriname and Saint Kitts and Nevis. Installation of the equipment was completed in these countries as well as in Saint Lucia (which benefited from a grinder under another project). Dominica received assistance in the layout and design of a community-based cassava-processing centre for the production of farine and talouma, and of a private processor facility (in collaboration with Dominica Export Agency) for the production of farine.	
Activity 4.3	Technical training in processing		
	Achieved	Yes	
	Comments	Technical training in best practices for root and tuber processing for use in value added products was completed as part of food safety training workshops. Guidelines were provided on establishing SOPs for value added products. GMPs were included in the workshop agenda. A limitation encountered in this activity was the lack of availability and use of SOPs by processors. As agro-processing is mainly at the micro level, there is less emphasis by processors to implement established operating guidelines as well as food safety mechanisms.	

Output 5	Marketing and communication tools for promotion for roots and tubers developed		
	Indicators	Target	Achieved
			Mostly
Baseline	Specific marketing and communication tools were not available.		
Comments	Over the years, FAO and other partners have prepared tools to conduct effective market assessments for existing and new products from roots and tubers, and developing new products based on the results. While efforts have been made to market these products, more needs to be done in order to reach a wider audience geared toward commercial production of products.		
Activity 5.1	Design a strategy for a marketing and promotional campaign		
	Achieved	Yes	
	Comments	Although a specific strategy for a marketing and promotional campaign was not prepared, the project actively engaged with the communication units of the respective MOAs to promote in-country work and activities. The project also facilitated VCCC requests for support to national agricultural events for the promotion and consumption of root and tuber crops. In Saint Lucia, the project supported a national school cooking competition. Students, aged between 15 and 16, from the six school districts prepared innovative dishes. The Ministry of Education joined FAO in hosting this national competition. World Food Day celebrations in Saint Lucia featured value added products from roots and tubers. In addition, a cassava and seafood festival was hosted to highlight the two commodities. The project supported the events by printing communication materials. In Saint Kitts and Nevis, the promotion of cassava and sweet potato value added products took place in 2018 and 2019 during the national agricultural shows. In Barbados, cassava and sweet potato value added products were promoted at the FAO booth during the annual Agrofest held towards the end of February. A study tour to Barbados by the Tobago House of Assembly, Division of Food Production, Forestry and Fisheries, introduced the Tobago team to the cassava and sweet potato value chains in Barbados. The promotion of roots and tubers and the value-added products generated under the project is expected to continue as part of the routine activities of MOAs, liaising closely with the communications units that are already sensitized to the project's work.	
Activity 5.2	Develop communication tools for television, radio and newspaper features, as well as social media		
	Achieved	Partially	
	Comments	As indicated at Activity 5.1, the project actively engaged with the communication units in MOAs. Various opportunities were used to facilitate the production of communication pieces for radio and social media. FAO provided technical reviews of content in support of this. It is necessary to promote and disseminate the materials produced under the project in order to continue the engagement of VCCC members and other stakeholders.	

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