



## Development of Local Food Production for Food Service in the Piedemonte

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**Introduction** – The feasibility study and other analyses by the Orinoquia Initiative shows that small and medium farmers in the Orinoquia have the capacity to produce a wide range of fruits, staple foods, dairy products and meats. Discussions in with business and organizations that provide meals to employees and customers in the Orinoquia indicate that they mostly buy food from food service companies in Bogotá. Those food service companies in turn buy raw materials that originate in the Piedemonte. With better technology, improved infrastructure and more human capacity in the Orinoquia there is an opportunity to shorten that food supply chain. Many of the foods produced in the Orinoquia could go directly from the producer to a local food service company to the client, thereby reducing costs and improving quality. This pilot project execution plan outlines an effort to test a replicable local food service model that could be used throughout the region. The pilot project is proposed for the Yopal area in Casanare, but it could be adapted to Villavicencio in Meta, Arauca City in Arauca, Puerto Carreño in Vichada, Mitú in Vaupés, Inírida in Guanía, and San José del Guaviare in Guaviare.

Some have suggested that the local food supply chain be managed by a farmer association or a cooperative. Others suggest that because of the high transactions costs and difficulty of decision making in cooperatives, it is much more likely to be successful organized as a for-profit business. This pilot project follows the private-profit business approach because there are very few examples of cooperative agricultural ventures in Colombia that are successful in the long term.

The Yopal area in Casanare is being proposed for the pilot because it has many small and medium farmers that need opportunities, a well-organized business community and local research capacity to develop technology and production practices. The Casanare Piedemonte has similar soil and climate to the Meta Piedemonte, but higher transportation costs to Bogotá so they are particularly disadvantaged by the centralization of food wholesaling and processing. Compared to other Orinoquia departments the Casanare business community is well organized through the Casanare Chamber of Commerce (<http://cccasanare.co/>). The Casanare business community has been particularly well organized in its response to the contraction of the petroleum business. The Casanare Chamber has been very helpful to the Purdue team in developing linkages with the business community in their community. Unitropico, UniSanGil and Unad have the capacity to provide the

more advanced management, agronomic and food processing training. They also have the research capacity and the motivation to do the research on new and improved local food production practices. In general Casanare citizens have a “can do” attitude that makes it a good place to pilot local food for food service.

The food service logistics firm is expected to have three key tasks:

- 1) *Scheduling food supply* – In most cases to provide continuous supply of a given food product, several small and medium farmers will produce it. For example, if clients have contracted for 1 ton of cassava per day year around, expected yield is 12 tons of high quality cassava per hectare, and 12 farmers are producing cassava, each would need to be producing about 2.5 hectares and production would need to be scheduled so that the food service firm knows that in January farmer X is supplying cassava and in February it is farmer Y.
- 2) *Pickup, cooling, handling & packing* – The food service firm would need a packing house with cooling facilities. Farmers might deliver some products to their packing house. In other cases, the firm might pick up the products at the farm or at a delivery point. The products would need to be washed, sorted, packed for delivery and cooled to prolong shelf life. To smooth the supply, facilities would need to be available for short term storage.
- 3) *Delivery* – The food products would need to be delivered to the clients on a regular basis. Because these are fresh foods, deliveries would need to be made several times per week. In the rainy season strategies would need to be put in place for deliveries to isolated agribusiness that do not have hard surface road access.

The local foods firm would start by handling fresh fruits, vegetables and staples. The specific products to be handled would depend on client needs. Staples are likely to be rice, maize, cassava and plantain, but also may include local carbohydrate crops like ñame, malanga and bore. In the long run, decisions would need to be made about handling dairy products, eggs and meat. Because the firm would be dealing with fresh products special care would be needed in food safety, both from a microbial contamination standpoint as well as avoiding pesticide residues. The firm would need to work closely with the Instituto Colombiano Agropecuario (ICA) and local food safety regulatory agencies.

Agricultural production involves managing variability. For instance in the cassava production example under point #1 above yields might be more or less than expected and quality also varies. Production would be planned based on expected client demands (expressed through contracts with down payments), but those demands might change and new clients may be added. Strategies are

needed to deal with surpluses and shortfalls. Will the food service firm run an “over stock” shop in which surplus is sold to the general population? Will some surpluses be donated to charities that feed the poor? Could some surpluses be processed, used as livestock feed or composted? Shortfalls might be dealt with by buying supplies in campesino markets, in other departments or from other food service firms.

Local food aficionados argue about what is local food? Is it food produced in the community, within 50 miles (i.e., 70 km) or 100 miles (140 km) or within the same state or province? For the purposes of this pilot project “local food” is food produced in Casanare. Inevitably, to respond to client demands the food service logistics firm will need to acquire some products from other departments. For example, the food service logistics firm might make an agreement with farmers or their organizations in Cundinamarca or Boyacá to provide vegetables that do not grow well in Casanare (e.g. potatoes, carrots, beets or cabbage). It is less likely that food will be sourced in Arauca or Meta because they produce the same range of foods as Casanare.

Research is needed because there is almost no production of vegetables for market in the Orinoquia and very little research on the technology and production practices needed for vegetable production in the context of the Orinoquia climate, soils, food preferences and economics. A wide range of fruits, staples and livestock products are produced in the Orinoquia and particularly in the Piedemonte. Most of those fruits, staples and livestock are backed by some research and technology transfer capacity (e.g., Corpoica, now Agrosavia, Ciat, universities, producer associations like Fedearroz for rice and Fedegan for livestock). In the Orinoquia vegetables are produced in home gardens, but not usually for market. Research is needed to find the adapted varieties and production systems. There may be vegetable production systems from elsewhere in the tropics that can be adapted.

Some of that vegetable research may build on indigenous knowledge. For example, in a brainstorming session with Casanare researchers in Yopal on September 18, 2017, a traditional vegetable production system was described using a wood box full of soil on posts or legs above the ground in which farmers grow herbs and vegetables. In Casanare this box is called a “cambuyón.” Could a cambuyón vegetable production system be scaled up?

In the modern economy successful companies are always looking for new products and services that can be profitably offered to clients. Consequently, research is also needed on the potential demand and production systems for tropical vegetables from other parts of the world (e.g., okra, jilo, bitter melon, cowpea, amaranth) and for indigenous Orinoquia vegetables like the cilantrón (Latin name: *Eryngium foetidum* - Has a taste like cilantro and is used in the popular soup called “San Cocho”), ahuyama squash, pepino de guiso (a vegetable that grows on a vine and resembles a large sweet pepper) and guatila (a vegetable that grows on a tree, looks like an acorn squash and must be parboiled before eating to reduce bitterness).

**Objectives** – The general objective of the project is to generate equitable and environmentally sustainable economic growth in the Orinoquia through development of a local food for food service model that can be replicated throughout the region. The specific objectives are:

- 1) Develop a local food for food service logistics company based in Yopal.
- 2) Create a network of small and medium farmers producing the foods demanded by food service clients.
- 3) Research to develop production and food handling practices for local foods (primarily vegetables) that are not currently marketed in Casanare.

**Approach** – If sufficient funding is made available, Purdue University would consider providing overall project leadership. At Purdue a senior faculty member, assisted by a steering committee, will oversee the project. In university terms, this senior faculty member will be the “Principal Investigator” and project lead. A project management unit would be created to coordinate activities from a base in Yopal. The unit would simultaneously seek out a local business to organize local food production, initiate contacts with Casanare farmers and start identifying food service customers. Most likely this will build on the capacity of an existing firm, but it might be a startup venture. The contractors and services providers will be part of a working group that meets monthly to insure good communication within the project and address problems early. A stakeholder advisory group would be developed to provide input on strategic decisions. The advisory group would include crucial stakeholders that are not contractors or service providers for the project, including the Ministry of Agriculture, Unidad de Planificación Rural Agropecuaria (UPRA), National Planning Department (DNP), GHL Hotels, Manuelita, Corporinoquia, World Wildlife Fund, World Conservation Society, Nature Conservancy, Fundación Palmarito and Government of Casanare.

The Purdue team has had preliminary discussions about the local food concept with Yadira Mendez Sandoval of BUYA SAS, a Yopal based logistics firm. Mendez was trained as an animal scientist at LaSalle University. She was assistant to secretary of agriculture of Casanare Department and later to the governor. She had her first experience with logistics when the Governor’s office was responsible for delivering 35 truckloads of cacao plants to farmers. She started her company about seven years ago and expressed enthusiasm for the local food for food service idea.

The Purdue Team has discussed the pilot project with Camilio Montagut, Casanare Secretary of Agriculture. Montagut said that his office is organizing food hubs run by associations of producers and they have organized 70 “campesino markets”. His office already knows most of the Casanare farmers with local food production expertise and interest. With the help of Montagut and his staff, the project management unit would start organizing the farmer network which would be turned over to the food service logistics firm as soon as possible.

Working with the Casanare Chamber of Commerce and building on the work by Purdue Team in Casanare potential clients for the local food would be identified. The original idea for the local food came from the management of the Palmar de Altamira in Orocué, Casanare. The Altamira oil palm plantation and oil extraction mill has over 500 workers in an isolated location in the flooded savannah that must be fed. Currently, they have a contract with a firm based in Bogotá. They are actively looking for alternatives and would be among the first contacted by the management unit. The tourism cluster organized by the Chamber of Commerce includes many companies interested in local, fresh food.

**Timeline** – The local food for food service is envisioned as a five year project with the following expected timeline:

**Year 1** – Identify a management team and set up the base in Yopal. Negotiate an agreement with BUYA (or other firm). Create an initial network of interested growers and identify clients. By the end of the first year the situation should include: 1) an agreement with BUYA (or other firm), 2) that firm has initial packing house facilities with infrastructure for sorting, cooling and short term storage. 3) agreements with initial clients for specific products confirmed by down payments, 4) contracts with an initial set of farmers to produce a limited list of products for specific delivery dates, 5) training of farmers and food logistics firm employees would be launched by Unitropico, UniSanGil, Unad, SENA and other institutions, 6) relationships developing between financial institutions, local food farmers and the local food logistics firm, and 7) research started on vegetable production in the Orinoquia.

**Year 2** – During the second year: 1) the first food products would be delivered to customers and the list of products would be expanded to meet customer demand, 2) surveys and interviews conducted of customer satisfaction and suggestions for improvements, 3) feedback solicited from growers, 4) research progress reviewed, and 5) all agreements, contracts and relationships would be reviewed, revised and strengthened.

**Year 3** – During the third year: 1) the availability of fruit, vegetable and staple foods would continue to be expanded, 2) decisions would be made about expanding into dairy, eggs and meat products, 3) surveys and interviews conducted of customer satisfaction and suggestions for improvements, 4) feedback solicited from growers, 5) research progress reviewed and initial decisions made of new products to be offered, 6, all agreements, contracts and relationships would be reviewed, revised and strengthened, and 7) internal mid-project evaluation and initial recommendations for replication of the approach elsewhere in the Orinoquia.

**Year 4** – During the fourth year: 1) pilot commercial scale testing of vegetable production systems developed by local research, 2) surveys and interviews conducted of customer satisfaction and suggestions for improvements, 3) feedback solicited from growers, 4) research progress reviewed and initial decisions made of new products to be offered and 5) all agreements, contracts and relationships would be reviewed, revised and strengthened.

**Year 5** – During the fifth year: 1) full scale commercial production using vegetable production systems developed by local research, 2) surveys and interviews conducted of customer satisfaction and suggestions for improvements, 3) feedback solicited from growers, 4) research finalized and published, 5) internal evaluation of the project and impact assessment by an external entity resulting in recommendations for improvements on the Casanare local food for food service system, and on replication of the concept elsewhere in the Orinoquia.

The exit strategy is that by the fifth year the project management unit will close. By that time food service logistics firm should be well established, that firm will coordinate local food production and technical support, self-sustaining relationships will have been established between financial institutions and the local food producers will be experienced and established. The final internal evaluation and the external impact assessment will summarize the project experience and provide the basis for future public and private investment in the local sector. In particular, the final evaluation and impact assessment should make recommendations about how the model can be adapted to other Orinoquia departments.

**Conclusions** – The local food for food service pilot project will test a business led model to promote the production and use of local food. The initial test is proposed for Casanare because of a base of motivated and capable small and medium farmers that need new markets, a well-organized business community and local research institutions with the capacity to develop new crops that can be produced locally. A business led model is proposed because cooperative models have high transactions cost and there are few long term successes among the cooperatives that have been tried in Colombia. During the five year life of the pilot project a local food for food service logistical firm will be developed to organize food production; wash, sort, pack and cool products, and deliver to clients. This firm will probably build on the capacity of an existing local company, but might be a separate start up firm. The experience in Casanare will guide development of local food service efforts throughout the Orinoquia region.