Puerto Rico
Science, Technology
& Research Trust

PR RESEARCH & INNOVATION
MEET UP

AUDIENCE INPUTS ON:

RESEARCH, INNOVATION & ENTREPRENEURSHIP IN PUERTO RICO'S AGRICULTURE

NOVEMBER 23, 2015
BIOPROCESSING DEVELOPMENT & TRAINING CENTER (BDTC)
MAYAGUEZ, PUERTO RICO

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Overview

The Trust's Local Meet Ups are done with the intention of generating alignment, as well as points of intersection, between the agendas of research, existing resources, and market opportunities; and to highlight Puerto Rico's intellectual capital in order to promote improved technology transfer, development, and commercialization of our intellectual property. The Meet Ups will serve as a vehicle to present the new resources made available by the Trust in these areas while simultaneously building an audience base that will provide the critical mass for the eventual celebration of the Puerto Rico Research & Innovation Summit, in early 2016.

Key points regarding the Meet Ups

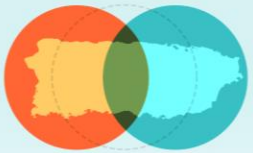
Foster encounters, sharing, learning, and improvement
The proposed event seeks to bring together key staff from public and private colleges and universities, private sector stakeholders, civil society organizations in charge of community economic development, business incubators, and key government players in the areas of economic development and education.

Discussion of important topics pertaining group dynamics and interests
The content agenda revolves around: Public Policy and indicators for innovation, research and development; Technology transfer for innovation; and, a new ecosystem for innovation in a variety of sectors within the Island's economy. These subject matters will be discussed in a variety of formats, from traditional presentation, workshop, and open discussion formats.

Increasing social capital by providing space and context from which to engage in crossed networking
The Meet Ups are geared at creating opportunities for participants in the fields of research, investment, traditional entrepreneurship, as well as social enterprising, in order to form bridges among groups, promote understanding through social interaction, and empower innovation.

Agenda

Agro Research, Technology and Entrepreneurship Showcase
Ana Rodríguez Agro Innova
Julio Hernández D. Economía Agrícola - UPR Mayagüez
Pedro Casas Agropónicos del Caribe
Ing. Carlos Pacheco TRITO Agro-Industrial Services, Inc.
Rosa Lozada Robles Biblioteca - UPR Mayagüez
Josefina Arce, PhD Finca Atabei
Duamed Colón AgroTropical



PR RESEARCH & INNOVATION
MEET UP

DATE: Nov 23, 2015
TIME: 9:45 a.m
VENUE: Bioprocess Development and Training Complex (BDTC)
Guanajibo Research and Innovation Park (GRIP)
Mayagüez, Puerto Rico

Meetup Agenda:

- 9:45 am
  Registration & Welcome
- 10 am
  Where are we?: The reality of Puerto Rico's Agriculture
- 10:20 am
  The state of scientific-agricultural research in Puerto Rico
- 10:40 am
  Perspectives for Precision Agriculture in Puerto Rico
- 11 am
  Lessons from Uruguay's agricultural transformation
- 11:30 am
  Networking Lunch
- 1 pm
  Agro Research, Technology and Entrepreneurship Showcase
- 2 pm
  Interactive Activity: Fostering collaboration between the agricultural industry and the academia
- 3:30 pm
  Wrap Up

Puerto Rico Science, Technology & Research Trust

Feedback on the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture

How do we grow our human capital base?

- *Not everything can be developed from within the academia*
- *Change the method of analysis to calculate Gross Agricultural Income. Need to compare with value added and the multiplier factor for the Island's National Product.*
- *Create more Summer programs and internships for high school graduates and 1st year college students*
- *Adopt and adapt the ALACIMA's platform concept to agriculture (Dr. Josefina Arce successfully implemented this program while at the University)…k-12 curricula*
- *Improve communication between the academia and the agricultural public sector through internships and supervised practicum.*
- *Entrepreneurial model projects in EEAs that can serve as technology transfers for other farmers*
- *Awareness and capacity building to change behavioral attitudes regarding intelligent agriculture*
- *Organization that matches expertise to agricultural issues*
- *Student internships in private farms*
- *Provoke student interest in agriculture by exposing them to success stories of local agronomists, agro-entrepreneurs, farmers, etc.)*
- *In the case that students are required volunteerism hours, promote service learning in agriculture-related activities.*

Feedback on the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture

How do we grow our human capital base?

- *Improvements in educational curricula (K-12 and college)*
- *Creation of a directory of enterprises and/or farms that can host students engaged in practicum/internship activity*
- *More education regarding innovative agricultural technologies*
- *Incentivize allied-agriculture activities and professional development*

- *Mentoring, especially from private successful entrepreneurs*
- *Technical Schools*
- *Value agricultural professions*
- *Curricular revision*
- *Integrate sustainability into agricultural education*
- *Change the image of what a farmer is*
- *Mentoring in horticulture vs. connecting agro-entrepreneurs to different departments*
- *Approach education in sustainability in the same manner that we teach others to care for the environment*
- *Education at various levels (early – elementary, intermediate, superior) and vocational schools*
- *New branding for agriculture*

Feedback on the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture

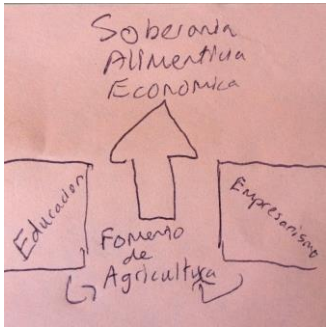
How do we grow our human capital base?

- *Process certifications*
- *Identification of pilot projects*
- *Educational – promotional campaign for communities and consumers*
- *HR Timeframe (short, medium, long)*
- *Transparency of information*
- *Easy communication through social networks for farmers and related audiences… "FarmHackPR"*
- *Consumer education: Pilot project s in recicloponics and agroecology*
- *Traceability*

- *'Benchmark' with other industries*
- *Technical and vocational certification program, short-term, specialized*
- *Post-graduate incentives*

Feedback on the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture



Summary the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture

- *Participants exhibit a holistic understanding of the subject, as they even illustrated the causes and effects of developing human capital for the sector. The articulation of the feedback received from all 6 tables of discussion attest to the need for new approaches to education, i.e., early exposure, experimentation at all educational levels (K-12), vocational education, among other ideas. Attendants recognize the limits (bureaucratic) of the institutions they work in while still remaining open to change (in curricula, inter-institutional collaboration, as well as joint research and experimentation) in order to rise to the challenge.*

- *There is significant support for a new branding for agricultural activity in Puerto Rico, as there is recognition of its devaluation. Further, there is consensus in that such repositioning should hinge on more/better/different education, as it is the key to a re-valuation of agriculture as a meritorious activity from a variety of perspectives (e.g., sustainability, nutritional sovereignty, research, employment, fair trade, entrepreneurship). Such exercise requires early exposure/experimentation that allows proper understanding of the importance of agriculture and related activities in that value chain.*

- *A different working culture was noticeable, especially among those engaged in private business activity, as they are proactive about their educational efforts and/or collaborative practices in order to meet present day challenges such as the rising cost of doing business, while simultaneously instilling new values and potential sprouting of a new working culture based on collaboration, as well as a strong sense of applied science to the practice and development of agriculture.*

- *Academics are eager to engage the private sector to tackle the challenges of the industry by putting their expertise and knowledge to their service. Beyond their desire, there is ample learning to be accumulated, as there is little experience in the cultivation of such relationships. Replication of this kind of event is recognized as key to successfully addressing this issue, as well as the value added of using technology to leverage these efforts.*

Feedback for University & Private Industry Collaboration

Building trust to enable collaboration

How do we bridge the gap?

- *Create an updated database on agricultural production*
- *Virtual marketplace*
  - *Announce future production (allow for better planting planning)*
  - *Marketing tool for farmers/growers/producers)*
- *Risk sharing*
- *Create extensive publicity engagement to promote and foster collaborative work among the government and the University*

- *Improve communication through networking*
- *Recognize the real needs for collaboration*
- *Identify mutual benefits of collaboration*
- *Risk mitigation*

- *Tipping point (13% + 5% = 18%)*
- *Use influential people to disseminate new concepts and behaviors*
- *Continue producing this kind of forums to facilitate the engagement of hard science researchers*
- *Create consortium or small coops among agriculture groups. Their success can serve as model for others.*

Feedback for University & Private Industry Collaboration

Building trust to enable collaboration

How do we bridge the gap?

- *Demonstrate the success of collaborative work through a model-pilot project that includes the private sector, academia and government.*
- *Present day circumstances are favorable for collaborative undertakings at UPR - Agricultural Sciences. We should move quickly before the administration changes*
- *Create templates for mechanisms, collaborative agreements among different sectors, for example: between the UPR and a farmer, UPR with a private university/school…It must be industry driven*

	Farmer
Financial	• Access to capital • More agricultural expertise/understanding from financiers • More competitive products
Government	• Anti Dumping regulations/legislation • Improve presence and participation among agricultural agencies and dependencies
Intermediaries	• Establish a % as a deposit on orders • Anti-Dumping regulation/legislation

Feedback for University & Private Industry Collaboration

Building trust to enable collaboration

How do we bridge the gap?

- *Establishment of social contracts*
- *Facilitate [sharing of] rules and regulations for organization and contracting*
- *Proactivity + Vision + Action*
- *Foster transparency, traceability through templates for contracts, open ledgers*
- *Unity + Cooperativism + Exchange*
- *Create a space for dialogue/discussion, sharing resources, ideas and experiences from different industries*

- *Patents vs. "open access". Is the PRSTT interested in patent development or commons licensing?*
- *Support SEA…to create more cybernetic platforms*
- *Reach Alternative Agriculture, i.e., Carlo, 2009*
- *Improve communication*
- *Eliminate barriers between academia and the private sector*
- *More outreach and dissemination*
- *Agricultural agent should be liaison with the farmer*
- *Rely more on the Internet for dissemination*
- *More support for content distribution*

Summary University & Private Industry Collaboration

Building trust to enable collaboration

- *There is a generalized call to action for better communication, which is characterized by: transparency, traceability, and openness, at the same time that a stronger ethical component underlies such exercise. The effect of this -more positive and productive communication- should lead to changes in public policy that enable spreading a culture of shared value and shared leadership*

- *There is openness to work collaboratively, but there is little experience with successful collaborative endeavors so as to produce a working culture that allows Island-wide, inter-sector, collaborative practices. Thus, there is a desire to see modeling, road mapping, templates, pilot projects, and other forms of educating on the engagement of collaboration so as to generate experiential awareness on the value and importance of collaborative work in Puerto Rico's agricultural sector as well as the rest of the Island's pressing economic, ecological, and social issues.*

- *Experimentation with other forms of education, such as: short-term technical schools, vocational schools, practicums in private farmland, more business internships, increased mentoring (by successful, engaged mentors). Experimentation with collaborative projects is also sought as a means to establish process-templates for others to follow.*

- *A more focused approach to agricultural production is sought, one that allows for process certification and benchmarking as examples of the criteria to be used in order to -seriously- generate more agricultural activity in Puerto Rico.*

Proposals for the future development of Agriculture in PR

Enabling human capital for sustainable/intelligent agriculture

The following content illustrates specific actions that were proposed by attendants to the event:

- *An extensive ad/promotional campaign to reposition agriculture as a key aspect of Puerto Rico's wellbeing. The campaign would heighten the value of agricultural research and production for local food sovereignty as well to increase our export capacity. In addition, it would be supported by local success stories, practical experience (internships, technical/vocational education, summer courses, service learning, immersion experiences), mentoring, and early networking experiences to promote increased awareness and capacity building that will -consequently- allows Puerto Rico to have more qualified labor force in agriculture.*

- *From the vantage point of economic accounting, the measurement and estimations of the value of agricultural production in Puerto Rico should be different, as Gross Agricultural Income should be compared to its value added and the multiplier effect in the National Product.*

- *Adaptation and implementation of ALACIMA, a successful program, developed and implemented by Dr. Josefina Arce, for early exposure and talent retention (K-12).*

- *Support and evolution of existing structures, for example: 1) enable EEA's to host agro-entrepreneurial projects and enable technology transfer to farmers and food producers, and 2) support SEA to create more cyber platforms.*

- *A database product/organization/initiative that connects research, researchers, practitioners, private business, and government in order to share information about resources, opportunities, available talent, and challenges needing solutions, all of which is warranted activity to foster communication, networking, and collaboration, to jumpstart economic activity in this sector. The implemented solution should rest on the outreach capacity provided by web/mobile technology and the use of social media, as these are effective ways to foster user generated content to enable loyalty and momentum that feeds economic activity.*

Content Analysis Top Arguments

Role of the Trust

As with the previous meetups, this event helped to solidify the Trust's leadership, based on consistent participant feedback. Thus, there is consistency in the claim for the Trust to help promote dialogue, provide a space for encounters, and -generally- act as a more active and functional advocate of collaboration among institutions, the private sector, and government.

Repositioning the value of agriculture

The re-valuation of Puerto Rico's agriculture hinges on more/better/different education, as it would provide an experiential change of perspective of agriculture as a meritorious activity that can provide viable aspirations for students to decide to engage academic activity, employment, and/or entrepreneurship that improves the Island sustainability, nutritional sovereignty, research, employment, fair economic activity. Early exposure/experimentation, advertising campaign, strategic communications, and continued discussion-networking efforts are key to enable a new understanding of the importance of agriculture and related activities in that value chain.

Communication for collaboration: Asset mapping, social media, and database development

Having a real-time, updated information regarding the situation of the Island's researchers, institutions, capabilities, and interests, is critical for our researchers and entrepreneurs to engage conversations leading to problem-solving and product/service generation. All these activities can be powered, monitored and managed with the support of readily available technology tools.