CRIG COCOA FLAVOUR PROJECT
(Ghana Quality Innovations Project)

SUCCESS AND WAY FORWARD
TOWARD THE NEXT GENERATION COCOA RESEARCH

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2016 Next Generation Cocoa Research Symposium
Introduction

- Ghana is ranked the second highest producer and the best premium quality cocoa beans provider in the world to support the chocolate industry.

- The key criteria for assessment of cocoa quality by the buyer and manufacturer include flavour.

- These parameters are attained through proper handling of the harvest and post-harvest processes, which consist of harvesting, pod breaking, fermentation, drying and storage.
Introduction cont’d

• In Ghana, education on harvest and post-harvest handling has largely centered on improving physical parameters and butter/fat quality.

• Also, quality assessment by the Quality Control Company (QCC) has generally not included flavour quality.

• The effect of harvest and post-harvest handling on development of cocoa flavour precursors has not been incorporated in the education due to inadequate resources.

• Hence, Ghana could lose the rich chocolate flavour that characterizes the premium quality Ghana cocoa.
Flavour Profile of a Standard Premium Quality Ghana Cocoa

- Cocoa: 8
- Acidity: 0
- Bitterness: 4
- Astringency: 4
- Sweet
- Fresh fruit
- Browned fruit
- Nutty
- Floral
- Woody
- Spicy
- Off flavor

**Final score**

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Introduction cont’d

• Under the WCF/USAID/ACI sub-grant Ghana Quality Innovations Project being implemented by CRIG, support has been given for the provision of resources both material and human.

• A State of the Art cocoa flavour laboratory has been established at CRIG.

• A sensory evaluation panel has also been trained to carry out cocoa sensory evaluation.

• Thus, CRIG and COCOBOD now have the capacity to train Ghanaian cocoa farmers on cocoa flavour development in order to enhance the flavour quality and diversity of Ghana’s cocoa.
Meet the Trainers

- **Zohara Mapes**
  - TCHO
  - Chocolate Maker
  - Leads Research & Development of TCHO’s new products
  - Has participated in the creation of all of TCHO’s current products
  - Experienced cocoa sensory evaluation trainer
Meet the Trainers

• John Kehoe
• Guittard Chocolate

• Over 20 years of experience in the cocoa industry
• Sensory expert
• Cocoa sustainability expert
• Winner of the Fine Chocolate Industry Association’s 2015 Outstanding Service to the Industry Award
Meet the Trainers

Ed Seguine
Seguine Cacao, Cocoa & Chocolate Advisors

- Almost 1/3 century working with cacao, cocoa and converting it into award winning chocolate
- Chair of the ICCO Fine and Flavor Cacao Committee
- Cocoa of Excellence founder, judge and Chair Technical Sensory Committee
- Fine Chocolate Industry Association Heirloom Cocoa Preservation Sensory Committee Chair
- Numerous articles (peer reviewed and industry technical) (36)
Main objectives of the project

• Promote sensory analysis of quality in the Ghanaian cocoa sector
• Protect the national flavor heritage of Ghanaian cocoa- thus protecting the historical differential advantage
• Integrate sensory analysis into research and breeding programs
Key activities

• Flavour evaluation of samples from on-farm trials
• Flavour evaluation of geo-samples collected from LBCs across various cocoa districts.
• Training of ToTs and farmers on cocoa flavour development
• Support of the Ghana fine flavour cocoa project
• Training of sensory evaluation panel
Key accomplishments

1. Establishment of flavour lab at CRIG.
2. Sensory panel trained both in Ghana and USA by expert (Ed. Seguine).
3. Training of 494 CHED Extension staff (Impact assessment to be carried out in Feb-March 2017)
4. Evaluation of Geo-samples (base-line data for assessment of of CHED training impact)
5. Evaluation of some on-farm trials
6. Training of Cocoa Abrabopa Association ToTs and farmers (over 200)
7. Support to Ghana fine flavour project (training of farmers, grafting support, establishment of irrigated budwood garden)
8. Training of students on flavour evaluation and chocolate making.
9. Chocolate with assorted flavours for Salon du Chocolat (Paris and Moscow)
Training of CHED extension staff and results

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Pineapple Flavouring

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Caramel Flavouring

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The way forward
Towards the next generation cocoa research

1. Adoption of flavour training by cocobod
   - CHED extension
   - Bunso Cocoa College
2. Training of QCC field staff and PCs of LBCs
3. Training of all cocoa farmers on flavour development
4. Review of harvest and post-harvest processes
5. Development of farmer friendly tools to enhance post harvest
6. Develop regional flavour improvement projects
   *(Impact of mislabeled parental clones in seed gardens and assessment of flavour diversity in West & Central Africa)*
7. Breeding for specific flavours?
8. Institute National/Regional cocoa quality (flavour) awards?
9. Strengthen PPP
Acknowledgement

- WCF
- USAID
- TCHO
- Guittard Chocolate
- CRIG
- COCOBOD
- Ed Seguine
Thank You