

VOLUNTEER REPORT

To be submitted to CRS at the end of volunteer assignment and shared with the Host

1.1 Assignment information

- a) Volunteer Name: Pablo Torres-Aguilar
- b) Host Organization: Sweet n Dry
- c) Assignment: Product development/Food science training
- d) Dates of Assignment: Dec 02-15, 2014
- e) Number of days worked: 14

1.2.1 Objective 1 in your SOW **Product formulation and development**

- a) Progress with the objective: **Completed.** We developed a series of formulations for children, pregnant women and elder according to the nutritional requirements (RDAs) of each group as well as cultural preferences. Besides creating and testing formulations (6 for children, 3 for pregnant women and 2 for elder) we estimated nutritional contribution of each product using Required Daily Intake (RDI) from IOM.
- b) Expected impacts/results: The formulation will increase the portfolio of products offered by sweet and dry, giving the company a competitive advantage over its competitors.
The products serve a social need by introducing a low cost high nutritional content product targeting susceptible groups, maximizing intake of vitamin A, iron, zinc and protein.
- c) Recommendations: The formulations require ingredients that are not found year round, however there is high availability of specific ingredients, including mango, moringa and sweet potato during season. Adequate storage practices will maintain the nutritional quality of these products in order to supply the demand out of season.

Formulation nutritional value:

Cost of formulation

1.2.2 Objective 2 in your SOW **Product branding and packaging**

- a) Progress with the objective: **In progress.** SnD is currently in fast expansion. The owners are looking for potential markets to target current and suggested formulations in short and midterm. SnD has a strong brand, recognizable among the town population. Owners are looking to increase the number of outlets to deliver both, packaged and bulk product
- b) Expected impacts/results: Expansion of portfolio will allow SnD to deliver product to different sectors of the market, including supermarkets, small retail shops and potential bulk buyers. The most important product category for sweet and dry is composite flours. The company is capitalizing in this
- c) Recommendations

1.2.3 Objective 3 in your SOW **Cost determination**

- a) Progress with the objective: **Completed.** We aided the owners of SnD to create a cost matrix to evaluate the cost of current and proposed formulation. The matrix accounted for materials, with an annex to determine price and availability during season, package, labor, inputs, distribution cost, machinery depreciation and other indirect cost not formally accounted.

b) Expected impacts/results: This is one of the most powerful tools the owners possess. Before the development of the cost matrix they were estimating the price, however after careful evaluation of one of the product lines the owners realized that they were selling the item below production cost to supermarkets. Expected results for this tool is careful cost evaluation for both, raw materials and composite flours.

c) Recommendations

1.2.4 Objective 3 in your SOW **Production and storage**

a) Progress with the objective Determination of cost, profit and availability of material throughout the year.

b) Expected impacts/results

c) Recommendations

Other areas of work: Machinery and expansion of production lines

Plant design

Implementation of GMP in current facility as well as considerations for future facilities

Food safety analysis (aflatoxin analysis) with current tools

1.3 Action Plan

Recommendation	Specific Action	Responsible person	By when
1. Implement changes for a food grade facility	Cleaning chemicals outside food grade facility Rodent traps Insect traps Protection from environment (seal windows) Rubber boots from employees		
2 Adequate storage.	Plastic bins for raw materials and final product (food grade)		
3. Sanitization	Hand washing station out of shop Sanitizer for shop and plant		
4. Minimize physical hazards	Cover lamps		

5.			
6.			

1.4 Number of people Assisted

- Through formal training
- Through direct technical assistance (Do not double count)
- Out of these above, number of host staffs
- Training/assistance by field

Category	Total	Males	Females
Members/ owners	2	1	1
Employees			
Clients/ Suppliers			
Family Members			
Total	2	1	1

1.5 Gender

- What gender roles did you recognize in your host community? Did these roles play a part in your assignment? How?

Yes, we recognized gender roles at a company and at societal level. As a company, sweet n Dry promotes women economic empowerment by hiring only female employees at its processing facility. The owners understand household social dynamics and promote an environment for integration and inclusion. In the scenario that SnD operates women are responsible for managing every day labor (caring for the kids, crops and various household chores) while men are head of households. SnD offers a safe place for women to earn a wage and improve household income. This group is more likely to be compliant with the recommendations we made the manufacturing facility.

At a societal level, the structure of the host community shaped the outcomes of our assignment. Since the main objective of my SOW was product development, we had to tailor our products to meet the nutritional need of children (6-24 m & 3 -5 y) while making it appealing to their caregivers. Sampling of proposed formulation addressed concerns and preferences by caregiver such as color and texture. When discussing with our host, she mentioned that mother regard "green porridges" as "nutritious foods", therefore we worked with ingredients with high mineral content that would promote this sensory attribute in the final product.

- How might CRS or the host organization improve opportunities for the women in this host or host community?

Catholic relief services is already doing an excellent work to for gender equality with this host. No further suggestions.

1.6 Value of volunteer contribution in \$

- Hours volunteer spent preparing for assignment: 20 hours. Preparation for assignment included literature review of nutritional issues on the region, cultural sensitive practices regarding infant



feeding, nutritional value of local foods, review of processing and storage of grains, fruits, vegetables and flours.

- b. Estimated value of all material contributions volunteer contributed to host during assignment: N/A

1.7 Value of hosts' contribution in \$ (Please consult the host as well)

- a) Meals N/A
- b) Transportation 14 days.
- c) Lodging N/A
- d) Translation N/A
- e) Other (Specify) N/A

1.8 Host Profile Data:

Did you obtain any data that supplements or corrects the data in the existing host information as detailed in the SOW? Please list it.

Yes, several documents and tools were facilitated to Sweet n Dry to expand the data including:

1. Excel tool to determine nutritional value of current and future formulations
2. Detailed list of nutritional value of proposed formulations
3. Nutritional needs of target groups
4. Matrix cost for ingredients and composite flours
5. Price/availability charts
6. Operation manuals for equipment
7. Protocols for aflatoxin analysis
8. Documentation of infant feeding regarding East Africa
9. Technologies for grain and flours preservation
10. Technologies on solar drying

1.9 Recommendations for CRS:

CRS-Farmer to Farmer program does a great work by building human capital in the region, however facilitating the flow of information (narrow the scope of the technical assignment based on revised dates) between the US and Kenya prior arrival would allow the volunteers to maximize the impact of their work. The host would also benefit if CRS emphasizes that the volunteer time in the country is a limited resource therefore their time should be maximized performing all the activities they have had in mind. Even if a volunteer doesn't have a profound knowledge of the issue, he/she could bring a different point of view that the host hasn't considered before.

After our assignment, the host could benefit by follow up and training by CRS such as excel and spread sheet. Excel is an excellent tool for production projection, cost calculation, nutrition requirements, etc. Finally, some of our training sessions and discussions could have been easier if we would have had media devices (projector). A projector might facilitate the presentation of complex documents to large audiences.