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**TECHNICAL REPORT ON STAKEHOLDERS' FORUM ON THE
VALIDATION OF THE INTERNATIONAL TRADE CENTRE
(ITC) COFFEE MANUAL FOR FARMERS AND AGRO-
PROCESSORS, CSIR-FOOD RESEARCH INSTITUTE, ACCRA,
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1.0 Introduction

Coffee is an important agricultural commodity, produced in about 80 tropical countries, with an estimated 125 million people depending on it for their livelihoods in Latin America, Africa, and Asia (Krishnan, 2017). Global annual production is estimated at 10.5 million tons of green beans (International coffee organization, 2021). Known mainly for cocoa production (the world's second-largest producer), Ghana is also entering the coffee sector. Coffee cultivation in Ghana is carried out by smallholder farmers mainly in the Ashanti, Bono, Bono East, Ahafo, Central, Eastern, Western, Oti, and Volta regions. The main coffee type cultivated in Ghana is Robusta coffee (*Coffea canephora*).

Coffee contributes significantly to the economic well-being of smallholder farmers in Sub-Saharan Africa (Wongnaa et al., 2021). However, coffee production and processing in Ghana remains underdeveloped and its great potential for enhancing the livelihoods of smallholder farmers and agro-processors in the value chain remains unrealized. As a non-traditional crop in Ghana, coffee has a great potential to supplement export earnings to the country through diversification since the country cannot solely rely on earnings from traditional crops like cocoa. Despite the economic benefits to be derived from coffee production and processing, the crop has not managed to thrive in Ghana. The quantity and quality of coffee produced and exported from the country have been significantly low in recent years.

The need to revive Ghana's coffee industry cannot be overemphasized. Strategies aimed at revamping the coffee industry in Ghana can only be devised after a thorough analysis of the current status of Ghana's coffee value chain and needs to focus on the sustainable intensification of high-quality coffee production. This offers a practical approach to increasing coffee production and processing with less impact on the environment, and ecosystem services, and indeed, improved for future generations. It is on the backdrop of this that the International Trade Centre (ITC) conducted an enterprise assessment of the coffee value chain actors in the Volta, Ashanti, Eastern, and Greater Accra regions to obtain first-hand information on the coffee value chain in Ghana. Several challenges were identified from this assessment which ranges from poor harvesting techniques, the use of improper equipment, poor manufacturing practices, a low hygienic environment, poor storage facilities, few innovations (with regard to value addition), and so on. There is a need for

capacity building of value chain actors in the coffee industry in order to address these challenges and improve both the quantity and quality of coffee produced in the country. The objective of this workshop was to involve all stakeholders in the coffee value chain to check the accuracy (validation) of the coffee manual developed from the enterprise assessment.

2.0 The Workshop

The validation workshop took place in the Director's conference room of the Council for Scientific and Industrial Research – Food Research Institute (CSIR-FRI), Accra. A total of 66 participants, comprising coffee farmers, hullers, roasters, agro-processors, consultants, Officials from the Ministry of Food and Agriculture (MoFA), International Trade Centre (ITC), Ghana Cocoa Board (COCOBOD), Food and Drugs Authority (FDA), Ghana Standards Authority (GSA), Robusta Coffee Agency of Africa and Madagascar (ACRAM) focal person, and Scientists from the Cocoa Research Institute of Ghana (CRIG) and CSIR-FRI attended the workshop (Attached appendix). The participants were made up of 62% males and 38% females (Figure 1). The workshop started with an opening prayer by Dr. Margaret Owusu, which was followed immediately by a self-introduction of participants, facilitators and organizers. This was led by Dr. John Edem Kongor.

A brief welcome address was given by Prof. Charles Tortoe, Director of CSIR-Food Research Institute. The welcome address by Prof Charles Tortoe highlighted the importance of coffee to the economy of Ghana, the main challenges within Ghana's coffee industry and the need to revive the coffee industry in Ghana in order to realize the potential of the industry to enhance the livelihoods of smallholder farmers, agro-processors and other value chain actors. He also provided a brief background to the enterprise assessment conducted by the ITC from which the current coffee manual was developed. According to Prof. Tortoe, on the 7th of September 2021, a team from the ITC, COCOBOD, CSIR-FRI, and a consultant (from ITC) embarked on this enterprise assessment (survey) by visiting value chain actors in the Volta, Ashanti, Eastern, and Greater Accra regions.

This was followed by a statement by Mr. Larry Attipoe, National Programme Coordinator, ITC Alliances for Action who also underscored the importance of the validation workshop. Mr. Larry Attipoe explained the workings of the ITC in relation to sustainable coffee production and processing in Ghana and other West African countries. He thanked the organizations present and CSIR-FRI for hosting the validation workshop. He also emphasized ITC's different functions

within the coffee value chain which include collaborating with coffee industries to improve coffee agro-processing by providing resources and a platform and also collaborating with institutional authorities, the World Bank, and the Food and Agriculture Organization (FAO), to establish an enabling environment in the coffee industry.

Miss Ivy Cynthia Osei Sampah, the focal person for ACRAM voiced her appreciation for participating in the validation workshop. She took the opportunity to highlight the functions of ACRAM in the coffee business. Miss Sampah listed some of the activities ACRAM has engaged in over the years, including providing farmers with seedlings and teaching them about the cultivation, harvesting, and use of post-harvest technology for coffee.

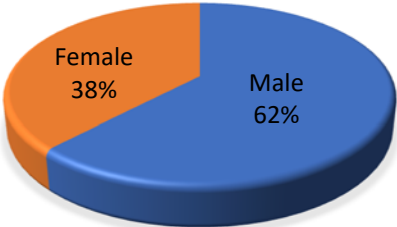


Figure 1: Gender of all participants who attended the validation workshop



A participant introducing himself



A section of the stakeholders at the validation workshop



Prof. Charles Tortoe delivering the welcome address



Mr. Larry Attipoe delivering a statement on behalf of the ITC



A statement by the focal person of ACRAM, Miss Ivy Cynthia Osei Sampah



Prof Charles Tortoe and Larry Attipoe having a tête-à-tête on the coffee manual

3.0 The validation exercise

The validation of the coffee manual was preceded by a presentation on the harvesting, postharvest management, and processing of coffee by Dr. John Edem Kongor and Mr. Richard Nyumuah. The presentation gave a snippet of the developed coffee manual to be validated. Mr. Richard Nyumuah began the presentation by elaborating on the purpose of the coffee manual which is to have a single document for capacity building of actors in the coffee value chain to improve both the quantity and quality of coffee produced in Ghana. Dr. Kongor continued the presentation by outlining the chapters in the manual which include:

- i. Harvesting and postharvest management
- ii. Good Manufacturing Practice (GMP) requirements
- iii. Food safety and quality management system
- iv. Coffee product development

To facilitate a smooth discussion by all stakeholders during the validation exercise, the participants were grouped into two (2). Group 1 focused on chapter 1 of the manual, while group 2 focused on chapters 2–4. The groups comprised the following stakeholders:

Table 1: Groups of participants for the validation exercise

Group 1	Group 2
Coffee farmers	Coffee processors
Coffee hullers	Coffee consultant
Coffee roasters	Ghana Barista Association
Coffee consultant	Ghana Export Promotion Authority
Ghana Cocoa Board	Ghana Cocoa Board
Ghana Standards Authority	Ghana Standards Authority
Food and Drugs Authority	Food and Drugs Authority
Cocoa Research Institute of Ghana	Cocoa Research Institute of Ghana
CSIR-Food Research Institute	CSIR-Food Research Institute



A presentation on the developed ITC coffee manual by Dr. John Edem Kongor



Mr. Richard Nyumuah, an ITC consultant gave a presentation on the developed coffee manual



Dr Samuel Lowor, Deputy Chief Executive, CRIG making a contribution to the workshop



Samuel Adimado, Manager, Golden Coffee, Accra making a contribution to the workshop

3.0 Inputs made during the validation exercise

3.1 Group 1

Following extensive deliberations on chapter 1 of the coffee manual by the stakeholders in group 1, the following inputs were made for subsequent incorporation into the manual:

☐ Method of harvesting (page 1)

- The team agreed on the picking method as the best-recommended method of harvesting.
- The team requested that the pictures showing the good practice should be brought first with the correct sign on them, while the bad practice (stripping method) should be next with the wrong sign. This should also be done for all the other stages in the manual
- With the aid of pictures, the team suggested that the practice of placing a cloth or polythene sheet at the base of the coffee plant on the farm during harvesting should be included in the manual. This will ensure the collection of all cherries and help prevent the cherries from falling on the bare floor while picking during harvesting.
- The team also suggested the inclusion of appropriate pictures depicting the picking of the cherries during harvesting in the manual. They pointed out that both the bad and good practice of harvesting pictures currently on the manual look the same.

☐ Drying and wet processing (page 2)

- The team suggested replacing ‘mixed cherries’ in the dry and semi-wet processing with ‘harvested cherries’
- The flow diagram of the dry and semi-wet methods of coffee processing should include storage at the drying and sorting, hulling, and bagging stages
- For storage after bagging, the best practice is to use a pallet. The bagged beans should be stored lying on the pallet and not leaning on the wall

❑ **Drying process (page 3)**

- The right way of drying which is that of using the raised platform was agreed upon by the team
- The team suggested that the raised platform picture should be brought first with the correct sign on it and the floor drying method should be second with the wrong sign on it.

❑ **Depulping (page 7)**

- The first bullet point on depulping should read, separation of matured ripe cherries from immature cherries.
- The authors of the manual should consult the previous ITC coffee manual for ideas on depulping.

❑ **Size grading (page 9)**

- The team suggested the inclusion of a list of activities before grading is done
- Sorting (removing broken and defective beans)
- Pictures of the beans during grading should be changed to that of green coffee

❑ **Roasting (page 10)**

- Mixing different beans and roasting at the same time is wrong and should be discouraged

3.1 Group 2

The comments and revisions made by stakeholders in group 2 are presented in the table below:

Table 2: Comments and revisions on the coffee manual by Group 2 members

Chapter/section	Action	Current version	Revision/comments
2 Requirement for Good Manufacturing Practices and Food Safety	Addition	There is no section on raw material specification	There must be a section on raw material (harvested cherries) specification with pictures
2.1 Raw material handling	Modification	Harvested cherries or green coffee must be sorted prior to processing and all black beans removed	Harvested cherries or matured coffee must be sorted prior to processing and all black beans removed
2.2 Plant design and structural requirements	Changing of format	This session is organized in a summary form	The section must be changed to a bulleting format to reduce text. Also, pictures should be added to this section to make it easy to understand.
2.2 Plant design and structural requirements	Modification	However, a clear physical barrier without any linking doors, windows or vents that prevents airflow from the processing area is acceptable.	This sentence must be modified to make it clear and understandable
2.3 Construction materials	Changing of format	Sentences under each item (wall, floor, windows and door) are in summary form	These sentences must be organized in a bulleting format
2.4 Process flow	Modification	L-shaped layout diagram does not show processes such as sorting, roasting etc.	These processes must be added to the diagram
2.4 Process flow	Addition	There is no rationale and importance of the flow layouts	There must a statement on the rationale and importance of the layouts such as to avoid contamination, reducing cost etc.

2.4 Process flow	Addition	There is no recommendation on disconnected processing layout	The types of process flow must include disconnected layout and also how to handle this type of process flow
2.6 Personal hygiene	Addition	There are no pictures or illustration under this section	It is important to include pictures or illustrations to explain this section
3.0 Food Safety and Quality Management Systems	Addition	No GMP requirements in the manual	There must be a section which explains the GMP requirements under this chapter
4.1 By-products from coffee processing	Modification	These include: husks, skin and pulp, immature/defective beans, parchment, silver skin, and spent coffee.	These include: husks, skin and pulp, immature/defective beans, parchment, silver skin, spent coffee, etc.
4.1.1 4.1.2 4.1.3 4.1.4	Addition	By-products obtained from each section are limited	There must be an addition of other products from other sectors such as the pharmaceutical, cosmetics etc.
4.4 Decaffeination	Modification	The statement ' Drying the decaffeinated beans back to their normal moisture level ' is under the process of decaffeination	This statement must be a point on its own under this section
4.0 Product Development in Coffee Processing	Addition	-	Addition of branding to the product development chapter
4.0 Product Development in Coffee Processing	Addition	-	There must be a chapter to tackle quality control and equipment fabrication



Dr Bernard Nsiah, a private coffee consultant contributing to the discussions of Group 1



Benedicta Tamakloe, Founder, Bean Masters, Accra contributing to the discussions of Group 1



Richard Nyumuah moderating the discussions in Group 2



Group 2 members following the discussions

Conclusion

A total of 66 persons, comprising key stakeholders in the coffee value chain attended the workshop. Speakers and stakeholders at the workshop underscored the importance and timeliness of the developed coffee manual. Various suggestions, comments and revisions were made by the stakeholders to improve the manual during the validation exercise. Experts in the coffee value chain will meet on the 24th of March to look at the revisions made and approve the manual for subsequent on-field capacity building of value chain actors.

References

Krishnan, S. (2017). Sustainable coffee production. Oxford Research Encyclopedia of Environmental Science. <https://doi.org/10.1093/acrefore/9780199389414.013.224>

International Coffee Organization (ICO) (2021). Coffee production by exporting countries. <https://www.ico.org/prices/po-production.pdf> (Accessed March 10, 2023).