Workshop report:

PLANNING WORKSHOP

“BANANA-BASED BEVERAGES IN EAST-AFRICA: DIAGNOSING VALUE CHAINS AND ASSOCIATED LIVELIHOODS”

November, 26 – 28th 2013

Kigali, Rwanda

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# Table of Contents

I. Workshop Background .................................................................................................................. 2

II. Workshop Objectives .................................................................................................................. 2

III. Methodology ............................................................................................................................. 2

IV. Consolidated summary country presentations .......................................................................... 3
   1. Emerging Issues ....................................................................................................................... 4

V. Summaries thematic presentations ......................................................................................... 5
   1. Value Chain Analysis and Development by Dietmar Stoian ............................................ 5
   2. Sensory Testing and Consumer Preference Methodology by Genevieve Fliedel ............ 7
   3. Gender Integration in Value Chain Analysis by Susan Ajambo .......................................... 8
   3. Impression field excursion Day 2 ......................................................................................... 10

VI. Working Group Outputs ......................................................................................................... 12
   1. Output working group 1 day 1 .............................................................................................. 12
   2. Output working groups 2-3 day 3 ......................................................................................... 13

VII. Next Steps and Timeline for Completion .......................................................................... 14

VIII. Workshop Evaluation .......................................................................................................... 15

IX. Annexes ................................................................................................................................... 17
   Annex 1. Workshop Program .................................................................................................... 17
   Annex 2. List of Participants ....................................................................................................... 19
   1. Work plan Tanzania ............................................................................................................. 20
   2. Work plan Uganda ............................................................................................................... 21
   3. Work plan Burundi ............................................................................................................... 22
   4. Work plan Rwanda .............................................................................................................. 23
   5. Work plan DR Congo .......................................................................................................... 25
I. WORKSHOP BACKGROUND

The workshop was the first activity related to the planned study on Banana-based beverages in East-Africa. This study is part of a wider research project under the CGIAR Research Program on Roots, Tubers and Bananas (RTB). The research project title is “Integrating gender in RTB thematic research to enhance development outcomes”. It seeks to conduct gender integration research to improve responsiveness of research conducted in RTB to increase equitable and efficient access to and use of resources and innovations. This particular study is related to theme 6 of the CRP-RTB with the objective of improving food security through postharvest approaches for bananas and plantain.

The objective of the study is to assess the importance of banana-based beverage production in East-Africa for rural and urban livelihoods. The countries included in the study are: Tanzania, Uganda, Burundi, Rwanda and DR Congo.

II. WORKSHOP OBJECTIVES

1) Knowledge exchange between scientists from different study sites on characteristics of banana-farming systems, main banana-based beverage products, processing methods, value chains and importance of activity for livelihoods.

2) Draft the methodology and framework for the study

3) Make a work plan for the study

4) Discuss budget allocation

III. METHODOLOGY

The workshop brought together scientists from the National Agricultural Research Institutes (NARI) from all 5 selected countries and from Bioversity International and CIRAD. A list of participants with affiliation is added at the end of this workshop report in Annex 2.

The participating NARI’s selected a team of two scientists each with expertise on 1) Food technology and/or Nutrition and 2) Socio-economics and/or Value Chain Analysis.

The workshop opened with welcome remarks from the workshop organizers and from the deputy Director General of the Rwanda Agricultural Board (RAB), Dr. Daphrose Gahakwa. This was followed by introductions of all participants. The first presentation gave a general introduction to the RTB program, the project and the specific study objectives to familiarize participants. The rest of the morning program consisted of country presentations by country-team scientists, following a specified format: banana cropping systems; cultivars used for beverage production; Banana-based beverage products; processing technologies; legal framework and institutional context; profiles of value chain actors from a gender perspective and contributions to livelihoods. A consolidated summary of these presentations and the discussions that followed is provided in the next chapter of this report.

In the afternoon three thematic presentations about value chain analysis, sensory testing and consumer preferences and gender integration were given by scientists from Bioversity and CIRAD. This was followed by the first working group session in which participants were asked to reflect on all the presentations given(country and thematic), identify knowledge gaps and brainstorm on principal research questions for the study. Groups then presented the questions and a first effort was made to consolidate these in plenary discussion. The day was closed with a briefing about the field excursion planned for the second day.
On day 2 a field visit was made to a cooperative enterprise producing banana-wine in Eastern Rwanda. We met with the president and other members and were shown the banana-wine production process.

Day 3 started with short recaps from workshop participants after which we continued with working group sessions. 2 working groups were formed on the basis of professional background (food technology/nutrition versus Socio-economics/ VCA) and asked to develop further the consolidated research question and link these to specific research methods. In the first session, participants were asked to focus on the value chain actors engaged in production of raw material (farmers and input providers). In the second session participants focused on Value chain actors engaged in Processing. Because of time constraints the third session on value chain actors engaged in trade and retail was skipped which was supposed to have covered traders and retailers.

In the afternoon, the working groups were reorganized into country teams and asked to develop country specific methodology based on the workshop outputs, focusing especially on selection of study sites, samples and budget. Each country team then presented their work plan. We then asked every country team to take some time to comment on the work plan of another team which evoked a fruitful discussion.

In the concluding part of the workshop, it was agreed that country teams get an additional week to update and finalize their work plan. In the meantime, the workshop organizers would assemble and organize all workshop outputs and start development of a common research methodology. Country work plans are added in this report as annex 3-7.

IV. CONSOLIDATED SUMMARY COUNTRY PRESENTATIONS

The presentations specified diverse juice/beer cultivars produced in each country highlighting the dominant species and their dominance in national banana production systems. Country variations in the dominance of juice/beer species were noted. In Uganda, for example, juice/beer cultivars cover <10% of the total banana production while in DR Congo, they represent 63.5% in South Kivu and 33.7% in North Kivu (Nzawe et al. 2009). The table below shows the juice/beer cultivars as presented per country;

<table>
<thead>
<tr>
<th>Country</th>
<th>Cultivars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>Mbide, Yangambi KM5, Pisang Awak (Kayinja) and FHIA 25</td>
</tr>
<tr>
<td>Rwanda</td>
<td>FHIA 25 and FHIA 17</td>
</tr>
<tr>
<td>Tanzania</td>
<td>East Africa highland banana-beer (Mbile), Kayinja/Kisubi (Pisang Awak),</td>
</tr>
<tr>
<td></td>
<td>FHIA 25, Yangambi KM 5, Gros Michel (Kijoge), Mtwishe, Sukari ndizi</td>
</tr>
<tr>
<td>Burundi</td>
<td>Igitsiri, Isha, Inkira, Intokatoke, Gros Michel, Yangambi Km5,</td>
</tr>
<tr>
<td></td>
<td>Kamaramasenge, Kisubi, Kayinja – Mugomozi, FHIA 17 and 25</td>
</tr>
<tr>
<td>DR Congo</td>
<td>Mukingiro, Kiware, Nshikazi (Magizi), Munyamimba, Kashulye, Nsinabubaka,</td>
</tr>
<tr>
<td></td>
<td>Ndundu, Impysi, Intokatoke Cavendish, Gros Michel, Yangambi, Malaya,</td>
</tr>
<tr>
<td></td>
<td>Poyo Kamaramasengi Kisubi musa, Kivuvu, Nyaluvu, Mugomboza FHIA 03, 23 &amp; 25</td>
</tr>
</tbody>
</table>

Banana-based beverages in East-Africa: Diagnosing value chains and associated livelihoods’
However, the presentations featured partial or no data at all on the coverage and volumes produced per cultivar in national banana production systems. A general observation was that research focusing on production systems of juice/beer cultivars is inadequate.

Banana-based beverage processing, across all the countries was recognized to be mostly artisanal involving rudimentary practices like juice extraction using the feet. Processing is basically done in the same way, following the same steps and involving similar practices in all the countries. The basic artisanal processing steps include:

*Ripening of the banana → peeling → fermentation → juice extraction using (grass/hands/feet) → filtering and packing*

Depending on the beverage type, roasted ground sorghum and water is added. In most countries distillation of such beverages takes place to produce a high-alcohol content gin.

The process for producing wine is slightly different and in general takes place in semi-industrial units. The countries most involved in wine processing seem to be Rwanda, Uganda and Tanzania. Semi-industrial processing in the countries was characterized by use of traditional labor-intensive technologies like manual squeezing with grass for juice extraction.

The banana based beverages produced include; juice, beer, wine and spirits (gin). Artisanal products are mainly sold in rural markets like; collecting centers, roadside markets and local retailers. Semi-industrial products are sold in urban markets like supermarkets with a few products on regional markets.

In the area of government policy towards banana based beverage processing, there was a marked differences between Rwanda and the other countries. Unlike the other countries, in Rwanda, artisanal beverage processing is illegal without a license. For the other countries, a license is only required for distillation. Consumption of alcoholic beverages during work hours is also illegal in Rwanda although enforcement is minimal. The presentation revealed that by and large, general policies on agricultural extension, cooperatives and groups, quality control, agro industry and manufacturing industries apply to banana-based beverage processing.

With regard to the banana beverages value chain actors from a gender perspective and the contribution to livelihoods, all the presentations manifested information gaps. A general observation was that little documentation was available on these aspects, particularly the gender roles along the chains and contribution to livelihoods and economies. As such, it was unanimously acknowledged as areas requiring research and documentation.

1. Emerging Issues

**Research and documentation:** production/farming systems with regard to juice/beer cultivars; mapping of the banana-based beverages value chains; gender analysis of the value chain; contribution to livelihoods and to economies

**Cultivars:** Local cultivars susceptible to diseases and low juice yield, Hybrid cultivars (FHIAs) actively promoted by governments of Rwanda and Tanzania.

**Processing technology:** Extraction and packaging - crude and labor intensive with issues of hygiene and limited shelf life of the products

- Appropriate processing technology and equipment, packaging and labelling, quality assurance and traceability
- Appropriately designed/purpose built processing facilities
Skills level of the actors - processing, business and entrepreneurship and marketing skills

- Ethical issues linked to beverages like alcohol abuse

V. SUMMARIES THEMATIC PRESENTATIONS

1. Value Chain Analysis and Development by Dietmar Stoian

(see: https://drive.google.com/file/d/0B_y9SufolH+UdiWVo2Q2xPZ2kOFU/edit?usp=sharing)

Content of the presentation

1) Why do value chains matter in a poverty context?
2) Chain definitions
3) Value chains and livelihoods
4) Value chain analysis: critical aspects and questions

The presentation started by providing a background on why VCs are important when we seek to address poverty. The argument provided was that smallholder households often capture limited benefits from existing VCs whereas there are a lot of opportunities for developing ‘pro-poor’ VCs in which smallholders gain because of economies of scale and/or value addition. The need to pay specific attention to endogenous and exogenous constraints that limit successful participation of smallholders in VCs was emphasized.

Examples of endogenous and exogenous constraints

<table>
<thead>
<tr>
<th>Endogenous constraints</th>
<th>Exogenous constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of business organization</td>
<td>Lack of enabling political-legal and institutional environments for smallholder business organization and value chain development</td>
</tr>
<tr>
<td>Lack of technical and entrepreneurial skills/capacities</td>
<td>Poor access to market information and effective technical, business and financial services</td>
</tr>
<tr>
<td>Low production volumes</td>
<td>Minimum threshold levels of required skills and capacities ♦ possible barriers to entry (including non-tariff trade barriers)</td>
</tr>
<tr>
<td>Low quality products</td>
<td></td>
</tr>
<tr>
<td>Little value adding</td>
<td></td>
</tr>
<tr>
<td>Lack of land, labour, capital, assets, electricity,</td>
<td></td>
</tr>
<tr>
<td>communications, storage facilities, processing</td>
<td></td>
</tr>
<tr>
<td>technologies, transport means, and business organization</td>
<td></td>
</tr>
<tr>
<td>Diversified livelihood strategies: potential trade-offs for investment in any one business activity; risk adverse</td>
<td></td>
</tr>
<tr>
<td>Limited ability/willingness to pay for effective services</td>
<td></td>
</tr>
<tr>
<td>Lack of trust relationships with business partners</td>
<td></td>
</tr>
</tbody>
</table>
Some useful VC definitions were provided:

**The market (or marketing) chain** connects all chain links from raw material production to final consumption.

**The supply chain** encompasses all organizations and activities associated with the flow and transformation of goods from the raw materials stage, through to the end use, as well as associated information flows.

**A value chain** is a vertical alliance or strategic network between numbers of independent enterprises focused on satisfying the demand of the final consumer.

**Value chain approach** is a set of interventions by chain actors (buyers, processors, smallholders) and/or service providers (government agencies, NGOs, consultants, projects) to generate higher value added and create win-win relationships among several chain actors.

Input and service providers that play an essential role in supply or value chains were identified. A distinction was made between 3 kinds of service providers; those providing technical, business and financial services.

In order to understand VCs and the role they play in people’s livelihoods, it was emphasized that, they should be placed and studied in the context constituting of political, legal, institutional, market and cultural aspects. A main question that was posed was:

*To what extent do diverse livelihood realities allow for meaningful asset building through VCD?*

A list of references for VCA and VCD was also provided:

- Evaluation of Agri-food Chains (IICA 1993)
- Handbook for Value Chain Research (Kaplinsky & Morris 2000)
- Competitive Strategies for Supply Chains (CIAT 2003)
- Guidance Sheets for Value Chain Analysis (CATIE-CeCoEco 2005)
- Shaping Value Chains for Development: Global Value Chains in Agribusiness (Humphrey 2005)
- Participatory Market Chain Approach (CIP 2006)
- Value Links (GTZ 2007)

The main aspects of VCA were identified as:

- Value chain mapping
  - visualization of chain flows and interactions
- Quantifying and analysing value chains in detail
  - combination of quantitative (# actors, volumes, prices, growth) and qualitative (interrelations) analyses
- Economic analysis of value chains
- overall value added, production and transaction costs, performance

Critical steps in VCA were also highlighted as:

- Identifying chain actors and their input and service providers
- Critical success factors (demand side)
- Organizational, technical, administrative and financial capacities and skills (first link of the chain)
- Role of technical, business and financial service providers for facilitating upgrading in the first link(s) of the chain
- Options for improved intra- and inter-business organization
It was noted that one way of quantifying the critical success factors was to identify the different factors and to score them on a score card for importance or relevance.

Focus areas of value chain analysis also identified as:
- The VC Actors: roles and functions in the chain
- Relationships: which institutional arrangements exist between chain stakeholders (sharing of information, benefits and risks)?
- Market: who are the clients, what are their needs and expectations?
- Value adding: what value is added where in the chain?
- Distribution of benefits: who benefits in what way (C/B)?
- Gender: resource access, labour division, income generation, decision making between men and women
- Upgrading: which options exist for upgrading processes, products, and/or functions?

In conclusion, some reflection questions concerning the banana-based beverage VCs were posed:
- Who are the value chain stakeholders and their service providers and how do they interact?
- Which options exist for product upgrading and differentiation?
- Which investments are needed to improve processing?
- Can transport, storage and market outlets be improved?
- Which services are need for improvements and who provides them?
- How to obtain finance for investments?
- Which roles do men and women play in the chain, which risks do they face, and which benefits do they capture?
- What is the perception of abuse of alcoholic beverages and which role does banana beer play therein?

2. Sensory Testing and Consumer Preference Methodology by Genevieve Fliedel

Content of the presentation
1) General introduction CIRAD
2) Explanation of methodology in the AFTER project

CIRAD is a French Research Centre working with developing countries on agricultural and development issues. CIRAD has its HQ in Montpellier, France and works in 90 countries over the world. Genevieve works in the unit Qualisud, the aim of this unit is to develop with partners an integrated approach for the manufacture and preservation of high quality food in Southern countries.

Genevieve has been involved in a large EU funded project called AFTER which had the objective to improve 10 traditional products from Africa regarding nutritional and sanitary aspects. The project has two main phases with each 4-5 steps with different studies/methods attached:

First phase: Before re-engineering in Africa and in Europe
Objective first phase: Gaining information for the re-engineering

1. Surveys to know the situation
   a. Surveys with VC stakeholders about; variability products, processes, raw material, products
b. Quality criteria, shelf-life, storage
2. Sensory profile of each product
   a. Sensory tests
3. Acceptability by African and European consumers
   a. Consumer tests; Focus Groups, CATA question, willingness to pay, hedonic tests
4. Physico-chemical characterization of each product
   a. Physico-chemical analysis
5. Relationships between sensory, hedonic, and physico-chemical characteristics

Second phase: After re-engineering in Africa and in Europe
1. Sensory profile of each product
2. Acceptability by African and European consumers
3. Physico-chemical characterization of each product
4. Relationships between sensory, hedonic, and physico-chemical characteristics

For making the sensory profile: Particular products were selected then a panel of 20 persons was formed. Descriptors of the products were then generated (50-100) regarding: appearance, odor, taste and texture and the most relevant descriptors were identified (12-16). Then the panel was trained on assessing the products by filling in a scoring sheet after which the data was analyzed.

For consumer testing: 3 to 5 products were selected based on the sensory profile. Then quantitative hedonic tests were conducted with 100 consumers regarding; acceptability of the product; preference for the products views of consumers about the product and consumption attitudes.

The methodology was illustrated with an example of one of the products of the AFTER project namely bissap. One method to save time to identify descriptors is the CATA question or Check-All-That-Apply question. For this method a list of descriptors is shown to the respondent and they can check all descriptors they think are relevant to describe the product. The CATA question can be used to draw conclusions on the perceptions of consumers on the different hedonic and sensory characteristics of a particular product.

3. Gender Integration in Value Chain Analysis by Susan Ajambo

(see: https://drive.google.com/file/d/0By9SufolHUdiSEU3OEs0WII4dms/edit?usp=sharing)

Content of the presentation
1) Definitions
2) Linking gender to VCA
3) Gender sensitive data collection
4) Gendered data analysis and reporting

The presentation started by defining basic concepts to create a common understanding. The following terms were defined:
  - Gender, gender equity, gender equality, gender analysis and gender mainstreaming.

Emphasis was laid on bringing the experiences, knowledge and interests of women and men to the agenda- not just adding a woman component.
The section on linking Gender to Value Chain Analysis answered the question: Why gender in value chain analysis?

The benefits of gendered value chain analysis were highlighted and contextual examples used to enhance practicality:

- Examining the chains through ‘gender glasses’ promotes implicit understanding of the whole VC through identifying and explaining:
  - Chains that are dominated by men or women and why
  - Circumstances under which men and women actors work
  - Circumstances under which men and women have been able to become successful chain actors
  - How men and women can be supported to make a more effective economic contribution/ improve livelihood
- Both men and women VC actors thus is it an act of justice and fairness to include the experiences, interests and knowledge of both
- Gender differences are important in explaining why different parts of the chain are blockages to growth thus it is critical to understanding and addressing the ‘weakest links’ within the VC
- Men and women have differential access to resources therefore their needs and opportunities may sometimes differ.
- Results of the study are more likely to benefit all actors- women not disadvantaged further or ignored all together
- Study findings free from arbitrary assumptions or inaccurate stereotypes of women's capacities and situation (implications for quality).

With regard to gender sensitive data collection it was highlighted that:

- Gender analysis related questions should be part of the survey (who does what; who has access to what assets (tangible and intangible); who benefits; who decides as well as beliefs, practices, and legal frameworks)
- Men and women should be included in survey populations and data collection teams should include male and female enumerators
- Use of both quantitative and participatory qualitative tools.
- Data should be collected on the factors that shape outcomes for men and women in value chains
- Use of methods that are simple for both male and female- consider people that may not know how to read and write (e.g. using graphic illustrations)
- Think of separate discussion groups for men and women and mixed groups so as to elicit the views of both. Time and places for group discussions should be convenient for men and women
- Expansion of the areas of investigation beyond the visible activities that are often under men’s control to bring women's often ‘invisible’ activities to light

Gendered data analysis and reporting was noted to involve:

- Organising data on gender roles and responsibilities-
  - Understanding the sex-segmented character of the value chain.
  - Mapping gender roles and relations along the value chain
- Identifying areas of gender inequalities as a guide to identifying gender- based constraints.
- Assessing the consequences of gender-based constraints
Thinking through the implications of the gender-based constraint at multiple levels and assessing the effect of the constraints on the operations along the chain

- Presentation of sex disaggregated data
- Explaining gendered differences in the data
- Looking for possible explanations and linkages between quantitative findings and the gender analysis and report accordingly

The Gender Dimensions Framework (GDF) – (as used by USAID) was also used to exemplify frameworks that offer a structured way of organizing and analyzing data on gender relations. The GDF organizes data along 4 areas under which possible questions for consideration were included:

1) Observed practices and patterns of participation (Practice)
   - In which part of the chain are women and men clustered?
   - What tasks do they undertake along the value chain?
   - Types and levels of Men’s and women’s participation

2) Existing patterns of access to productive assets (Assets)
   - What skills and opportunities are available to men and women along the value chain?
   - Are men and women informed about and able to access technologies that support productivity?
   - Men and women’s bargaining power in negotiating, managing relationships and advocating for change in the chain environment.

3) Social beliefs and perceptions (Beliefs)
   - The gendered division of labour which facilitate or impede productivity along the chain
   - Ideas about the appropriateness of opportunities for men and women
   - Expectations about men’s and women’s behaviour, which shape their interactions and govern the chain environment.

4) Laws, policies and institutions (Laws).
   - Do formal laws and institutional practices directly or indirectly erect barriers against men or women?
   - Do the laws or institutional policies formalize existing beliefs and practices which may be discriminatory?

3. Impression field excursion Day 2

The field visit provided the participants opportunity to visit the eastern province of Rwanda, (Rwanda's leading banana production zone) and to observe semi-industrial banana beverage processing at COPROVIBA (“Cooperative de Production du Vin de Banane”) in Ngoma District.

**COPROVIBA** is a commercial banana wine producing cooperative established in 2004 with 3 members and currently has 20 members (12 females and 8 males). There are 3 categories of members in the cooperative:
- Banana producers - not working in the cooperative.
- Banana producers- working in the cooperative.
- Workers in the cooperative- not banana producers

Membership of the cooperative is open but subject to paying a membership fee of $11,000. Benefit sharing among members is guided by the statute of the National Cooperative guidelines.
which stipulates 20% of profits to be shared among members and 80% re-invested. The cooperative won an excellence award from RAB.

The cooperative benefited from training by RAB (former ISAR) with funding from ASARECA. The training covered banana seed quality to final processed product (good quality wine) and as a result, production was organized, regulations established, hygiene improved and wine quality improved. Other activities of the cooperative include: fibre production; plantation management and juice production. It employs a total of 32 people involved in various activities such as: Administrative roles; washing bottles; packaging; labelling and marketing. Some of the workers are permanent staff.

**Facilities**
- **Ripening Room** (5X6 Meters) – constructed from funding by ASARECA, takes up to 5 tons of bananas and facilitates even ripening over a period of 6 days. Ripening temperature is controlled at 30°C.
- **Juice extraction room** – manual extraction done using grass. The grass is dipped in hot water for hygiene purposes. After extraction, juice is sieved and stored in jerry cans for at least 1 to 3 months.
  - The cooperative has developed a business plan to acquire a juice extractor from Germany.

**Processing steps**
- Banana ripening → Banana peeling → disinfecting grass → manual juice extraction → sieving → pasteurization → fermentation → Packaging → labelling → marketing

Quality control involves; brix measurements, measurement of the alcohol content and PH levels.

**Cultivars**
- *FHIA- 25 for the large majority complemented with small amounts of Kamaramasenge, Kayinja and Intudu (Mbide)
- Preference for FHIA-25 cultivar due to the quantity of juice it yields.

**Production**
In 2009, estimated 1000 crates per month (24 bottles in a crate 300mls) and now estimated 5000 crates per month. Produces small and big bottle crates- small bottles are sold at 300RF ($5) and the big bottles at 3500RF ($55).

**Market for banana products**
- Wine sold to wholesalers within the 4 provinces of Rwanda.
- Banana fiber sold to an American company nearby that produces hygienic pads.

**Contribution to Livelihoods- testified by one member (Gatabazi Celestine)**
- Able to educate his children to university
- Bought a house in trading centre, constructed a 3 roomed business house and rehabilitated his residential house.
- Has a banana plantation and supplies the cooperative
- Bought a commercial car
- Has constructed a bio-gas unit

**Challenges**
- High cost of bottles and labels- bottles imported.
VI. WORKING GROUP OUTPUTS

1. Output working group 1 day 1

For the first working group participants received the instructions below:

**Objective workgroup: Formulating Principal Research Questions and sub-questions**

A) Please formulate 1-3 RQs that respond to all aspects mentioned and to the main objective of this project (30 min)
B) Break up the principal RQ into sub-questions

Presented here is a consolidation of the Research questions developed in the working groups.

**RQ 1 How is the value chains of the different banana-based beverages structured?**
- How are men and women involved in the value chain as direct actors?
- What is the institutional context of the VC?
  - What legal and policy framework exists?
  - Do existing laws and institutional practices directly or indirectly discriminate against men or women?
  - How is service provision to men and women VC actors organized?
  - What access do men and women VC actors have to inputs?
- What linkages exist between and among VC actors?

**RQ2. What are the livelihood implications of engaging in the banana-based beverage VC for different actors involved?**
- What are volumes produced, processed and traded at every stage of the value chain?
- What are margins along the VC?
- What are production costs?
- What risks are involved?
- What constraints do men and women actors encounter?
- What opportunities exist for men and women engaged in the VC?
- What is net income from this VC activity?
- How are decisions with regards to spending of VC revenues made?
- How is food security affected by engaging in this VC?
- Are there any other livelihood implications of engaging in this VC?

**RQ3. How does raw material production and choice of processing technology affect operations along the VC?**
- Which cultivars are used?
- How do the cultivars used affect the quality and acceptability of the products
- What processing technologies are used?
- How does the processing technology affect the quality and acceptability of the products *(hygiene, packaging etc.)*?
- How are men and women involved in raw material production and processing *(types and levels)* along the VC?
- What factors determine the roles that men and women engage in?
- Are men and women informed about and able to access technologies that support productivity?
- What constraints do men and women actors involved in raw material production and processing encounter?
- What opportunities exist along the VC for men and women actors engaged in raw material production and processing?

**RQ4. How does trade and retail chain affect operations along the whole VC?**
- What markets do the products reach?
- What prices do end-users pay in different outlets?
- What is the level of Men and women’s bargaining power in negotiating and managing market relationships?
- What are the preferred products characteristics for traders and retailers?
- What are preferred product characteristics for end-consumers?
- Are there any entry barriers to the market for ‘new’ VC actors?

**2. Output working groups 2-3 day 3**

For the first working groups on Day 3 participants were divided in 2 groups based on expertise (socio-economic and Food science). There were supposed to be 3 working groups; each focusing on another segment of the value chain (Input suppliers and producers of Raw material; rural processing and semi-industrial processing; Trade and Retail), due to time constraints however the third working group was eliminated. Instructions were similar for all working groups and our presented below.

Building on the research questions that we developed over the last 2 days, focus on the first / second part of the value chain, more precise on the following VC actors:

- Producers of raw material (farmers); Suppliers of inputs to farmers
  
  Or

- People involved in artisanal (home stead) processing of banana for beverages
- People involved in (semi) industrial processing of banana for beverages

Identify what we need to know about these actors focusing on your own disciplinary background. Develop 3-6 main questions (25 min) and identify per question the best research method(s) or tools to answer these questions (20 min), you can give your reason as why this is the best method to use.
### Actors identified:

<table>
<thead>
<tr>
<th>Direct actors</th>
<th>Indirect actors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers of raw materials (M/F)</td>
<td>Agri-input providers</td>
</tr>
<tr>
<td>Producers and workers within the processing units</td>
<td>Financial service providers</td>
</tr>
<tr>
<td>Workers who are not producers (M/F)</td>
<td>Business service providers</td>
</tr>
<tr>
<td>Processors who are whole sellers (M/F)</td>
<td>Government</td>
</tr>
<tr>
<td>Raw material producers who are processors (M/F)</td>
<td>Food regulation bureau</td>
</tr>
<tr>
<td>Processors who are retailers (M/F)</td>
<td>Extension services</td>
</tr>
<tr>
<td>Entrepreneurs don't produce, don't work but own</td>
<td></td>
</tr>
<tr>
<td>Retailers (different locations and scales)</td>
<td>Village authorities</td>
</tr>
<tr>
<td>Traders (different locations and scales)</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td></td>
</tr>
</tbody>
</table>

A list of detailed question was developed in each working group for both of the 2 segments discussed.

### VII. NEXT STEPS AND TIMELINE FOR COMPLETION

In the last part of the workshop participants worked together with their country colleague on a work plan for their own country. These work plans were finalized shortly after the workshop and can be found in Annex 3.

Next steps are to develop a common study approach including tools for data collection and to consequently adapt it to the local context in each country. Before that the literature review has to be finalized.

We will need to make Letters of Agreement with the partners in all 5 countries to facilitate transfer of funds.

Below is an overview of the different activities per time period. We will finalize the project with another workshop to discuss results and develop a proposal for funding.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dec</td>
</tr>
<tr>
<td>Site selection</td>
<td></td>
</tr>
<tr>
<td>Tools development and adaptation</td>
<td></td>
</tr>
<tr>
<td>Testing tools</td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td></td>
</tr>
<tr>
<td>Data Sharing and Analysis</td>
<td></td>
</tr>
<tr>
<td>Report writing</td>
<td></td>
</tr>
<tr>
<td>Workshop</td>
<td></td>
</tr>
</tbody>
</table>
VIII. WORKSHOP EVALUATION

At the end of the workshop participants were asked to evaluate the workshop by answering 10 pre-designed questions relating to:

- Study and Workshop objectives
- Thematic presentations
- Facilitation
- Logistical organisation
- Motivation to participate in the study and
- General questions on what was interesting missed or disliked.

The questions were open-ended and anonymous and a total of 9 participants responded to them:

The participants were asked if the study and workshop objectives were clear to them and all the 9 respondents agreed that they were clear. All the respondents also felt that the workshop objectives were met. One respondent, attempted to rank the question on whether the objectives were met with 95% met.

The thematic presentations were also generally appreciated by the respondents. They were asked what they thought about each presentation and they conveyed their thoughts through the expressions below:

<table>
<thead>
<tr>
<th>Value Chain Analysis</th>
<th>Sensory Testing and Consumer Preferences</th>
<th>Gender Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understandable</td>
<td>Very interesting</td>
<td>Gender is important</td>
</tr>
<tr>
<td>Very informative</td>
<td>Very good</td>
<td>Very good x2</td>
</tr>
<tr>
<td>Nice and clear</td>
<td>Good and clear</td>
<td>Good and interesting</td>
</tr>
<tr>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Interesting x3</td>
<td>Interesting x2</td>
<td>Interesting</td>
</tr>
<tr>
<td>Good and helpful</td>
<td>Good and helpful</td>
<td>Good and helpful</td>
</tr>
<tr>
<td></td>
<td>Technical</td>
<td>Exciting</td>
</tr>
</tbody>
</table>

However, 1 respondent felt that using Skype as a medium for presentation was limiting with regard to interaction between the presenter and the audience. On the question of what was missed in this workshop, this particular participant noted, “some clarifications…quick presentation on VC with Skype??…Is it possible to get more knowledge on the VC concept without Skype?”

With regard to the workshop facilitation, the respondents had no complaints. They evaluated it as: good (3); very good (4) and organized and clear (1). One participant though, did not respond to this question. Apart from the field trip being far, the respondents generally appreciated the logistical organization of the workshop. One respondent commented, “…it was well organized”

Motivation to participate in the study was very high as all the respondents indicated. The 2 reasons advanced were: interest in value chain works and concern about the information gap on specifically banana based beverages and contribution to livelihoods. With respect to value chain work there was general anticipation for gaining new knowledge and skills.

The participants were also asked to comment on what was interesting about the workshop. The responses to this question were varied and ranged from general comments like ‘content’ to
comments on specific presentations and/or aspects of the workshop. The majority of the respondents (5/9) appreciated the participatory nature of the workshop (group work) and the exchange among disciplines. With regard to the presentations, 1/9 participants found the country presentations interesting and 2/9 participants found the presentations on gender Integration and VCA interesting. For 1/9 participants, the workshop objectives and planned activities were particularly interesting.

Clearly, the results of the evaluation attest to the good organization and facilitation of the workshop. They also indicate the thoughtful preparation and relevancy of the content to the study.
## IX. ANNEXES

### ANNEX 1. WORKSHOP PROGRAM

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>What</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DAY 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>08.30 – 08.45</td>
<td>1. Welcome</td>
<td>Anne/DG Daphrose</td>
</tr>
<tr>
<td></td>
<td>08.45 – 09.00</td>
<td>2. Logistics</td>
<td>Susan / Justice</td>
</tr>
<tr>
<td></td>
<td>09.00 – 09.15</td>
<td>3. Personal Introductions</td>
<td>Susan</td>
</tr>
<tr>
<td></td>
<td>09.15 – 09.45</td>
<td>4. Introduction project</td>
<td>Anne</td>
</tr>
<tr>
<td></td>
<td>09.45 – 10.15</td>
<td>5. Country presentation 1 Rwanda</td>
<td>Jean Bosco/ Jean de Dieu</td>
</tr>
<tr>
<td>10.15 – 10.30</td>
<td>COFFEE/TEA BREAK</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.30 – 11.00</td>
<td>6. Country presentation 2 Uganda</td>
<td>Kephas/ Sam</td>
</tr>
<tr>
<td></td>
<td>11.00 – 11.30</td>
<td>7. Country presentation 3 DR Congo (Kivu’s)</td>
<td>Dowiya / Gaby</td>
</tr>
<tr>
<td></td>
<td>11.30 – 12.00</td>
<td>8. Country presentation 4 Tanzania</td>
<td>Esther / Rachel</td>
</tr>
<tr>
<td></td>
<td>12.00 – 12.30</td>
<td>9. Country presentation 5 Burundi</td>
<td>Beatrice/ Maxime</td>
</tr>
<tr>
<td></td>
<td>12.30 – 13.30</td>
<td>LUNCH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.15 – 15.00</td>
<td>11. Presentation CIRAD</td>
<td>Genevieve</td>
</tr>
<tr>
<td></td>
<td>15.00 – 15.45</td>
<td>12. Presentation Gender integration in study</td>
<td>Anne / Susan</td>
</tr>
<tr>
<td>15.45 – 16.00</td>
<td>COFFEE/TEA BREAK</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16.00 – 17.00</td>
<td>13. Working groups: Formulating RQs</td>
<td>groups</td>
</tr>
<tr>
<td></td>
<td>17.00 – 17.50</td>
<td>14. Groups Presentations and discussions</td>
<td>groups</td>
</tr>
<tr>
<td></td>
<td>17.50 – 18.00</td>
<td>15. Field trip briefing + Closure</td>
<td>Jean Bosco / Anne</td>
</tr>
<tr>
<td></td>
<td>19.00 – 22.00</td>
<td>Social event Cocktail</td>
<td></td>
</tr>
<tr>
<td><strong>DAY 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>08.00 – 17.00</td>
<td>FIELD VISIT</td>
<td></td>
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<tr>
<td><strong>DAY 3</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>08.30 – 08.40</td>
<td>1. Recap day 1</td>
<td>Volunteers</td>
</tr>
<tr>
<td></td>
<td>08.40 – 08.50</td>
<td>1. Recap day 2</td>
<td>Volunteers</td>
</tr>
<tr>
<td></td>
<td>08.50 – 09.00</td>
<td>1. Discussion</td>
<td>Susan/Anne</td>
</tr>
<tr>
<td></td>
<td>09.00 – 09.15</td>
<td>2. Explanation working groups</td>
<td>Anne</td>
</tr>
<tr>
<td></td>
<td>09.15 – 10.00</td>
<td>3. Working groups: Theme 1 (input suppliers and producers raw material)</td>
<td>groups</td>
</tr>
<tr>
<td></td>
<td>10.00 – 10.45</td>
<td>4. Groups presentations and discussion</td>
<td>groups</td>
</tr>
<tr>
<td>10.45 – 11.00</td>
<td>COFFEE/TEA BREAK</td>
<td></td>
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<tr>
<td></td>
<td>11.00 – 11.45</td>
<td>5. Working groups: Theme 2 + 3 (rural processing and semi-industrial processing)</td>
<td>groups</td>
</tr>
<tr>
<td></td>
<td>11.45 – 12.30</td>
<td>6. Working groups Theme 4 + 5 (Trade and retail)</td>
<td>groups</td>
</tr>
<tr>
<td>12.30 – 13.30</td>
<td>LUNCH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.30 – 14.15</td>
<td>7. Groups presentations and discussion (Theme 2 - 5)</td>
<td>groups</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Presenter(s)</td>
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<td></td>
</tr>
<tr>
<td>14.15 – 14.45</td>
<td>8. Presentation action-plan</td>
<td>Anne</td>
<td></td>
</tr>
<tr>
<td>15.30 – 15.40</td>
<td><strong>COFFEE/TEA BREAK on the go</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.30 – 17.00</td>
<td>11. Commenting action plans</td>
<td>Country teams</td>
<td></td>
</tr>
<tr>
<td>17.00 – 17.55</td>
<td>12. Presentations comments and discussion</td>
<td>Country teams</td>
<td></td>
</tr>
<tr>
<td>17.55 – 18.00</td>
<td>13. Way forward and Closure</td>
<td>Anne / Susan</td>
<td></td>
</tr>
</tbody>
</table>
## ANNEX 2. LIST OF PARTICIPANTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Participant</th>
<th>Institution</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Susan Ajambo</td>
<td>Bioversity</td>
<td><a href="mailto:s.ajambo@cgiar.org">s.ajambo@cgiar.org</a></td>
</tr>
<tr>
<td>2</td>
<td>Dietmar Stoian (over skype)</td>
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</tr>
<tr>
<td>3</td>
<td>Anne Rietveld</td>
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<td><a href="mailto:a.rieveld@cgiar.org">a.rieveld@cgiar.org</a></td>
</tr>
<tr>
<td>4</td>
<td>Genevieve Fiedel</td>
<td>CIRAD-Persyst UMR Qualisud</td>
<td><a href="mailto:genevieve.fiedel@cirad.fr">genevieve.fiedel@cirad.fr</a></td>
</tr>
<tr>
<td>5</td>
<td>Dr. Maxime Ndayizeye</td>
<td>Faculty of Agronomy and Bio-Engineering, University of Burundi (ISABU)</td>
<td><a href="mailto:maxime.ndayizeye@gmail.com">maxime.ndayizeye@gmail.com</a></td>
</tr>
<tr>
<td>6</td>
<td>Dr. Dowiya Nzaweke</td>
<td>INERA-Mulungu for eastern DRC.</td>
<td><a href="mailto:dowiya@yahoo.com">dowiya@yahoo.com</a></td>
</tr>
<tr>
<td>7</td>
<td>Shabani Salumembe</td>
<td>INERA-Mulungu for eastern DRC.</td>
<td><a href="mailto:gabyshabani1@yahoo.fr">gabyshabani1@yahoo.fr</a></td>
</tr>
<tr>
<td>8</td>
<td>Beatrice Nsabimana</td>
<td>Institute des sciences Agronomiques du Burundi (ISABU)</td>
<td><a href="mailto:nsabimanaza@yahoo.fr">nsabimanaza@yahoo.fr</a></td>
</tr>
<tr>
<td>9</td>
<td>Rachel Zacharia</td>
<td>Makuru-Agricultural Research Institute (ARDI)</td>
<td><a href="mailto:rachellove@in.com">rachellove@in.com</a></td>
</tr>
<tr>
<td>10</td>
<td>Esther Nkuba</td>
<td>Makuru-Agricultural Research Institute (ARDI)</td>
<td><a href="mailto:dominankuba@yahoo.com">dominankuba@yahoo.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:dominankuba2013@gmail.com">dominankuba2013@gmail.com</a></td>
</tr>
<tr>
<td>11</td>
<td>Dr. Kephas Nowakunda</td>
<td>National Agricultural Research Laboratories Institute, Kawanda (NARL)</td>
<td><a href="mailto:kephas@kari.go.ug">kephas@kari.go.ug</a></td>
</tr>
<tr>
<td>12</td>
<td>Samuel Mpiira</td>
<td>National Agricultural Research Laboratories Institute, Kawanda (NARL)</td>
<td><a href="mailto:smpiira@gmail.com">smpiira@gmail.com</a></td>
</tr>
<tr>
<td>13</td>
<td>Jean Bosco Shingiro</td>
<td>Rwanda Agricultural Board (RAB)</td>
<td><a href="mailto:bshingiro2000@yahoo.fr">bshingiro2000@yahoo.fr</a></td>
</tr>
<tr>
<td>14</td>
<td>Jean de Dieu Nsabimana</td>
<td>Rwanda Agricultural Board (RAB)</td>
<td><a href="mailto:jd.nsabimana@gmail.com">jd.nsabimana@gmail.com</a></td>
</tr>
<tr>
<td>15</td>
<td>Daphrose Gahakwa (Dr)</td>
<td>Rwanda Agricultural Board (RAB)</td>
<td><a href="mailto:daphrose.gahakwa@rab.gov">daphrose.gahakwa@rab.gov</a></td>
</tr>
<tr>
<td></td>
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<td>v.nw</td>
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<tr>
<td>16</td>
<td>Christopher Semakula</td>
<td>Bioversity International</td>
<td><a href="mailto:c.semakula@cgiar.org">c.semakula@cgiar.org</a></td>
</tr>
<tr>
<td>17</td>
<td>Kyegimbo Justine</td>
<td>Bioversity International</td>
<td><a href="mailto:j.kyegimbo@cgiar.org">j.kyegimbo@cgiar.org</a></td>
</tr>
</tbody>
</table>
ANNEX 3. COUNTRY WORK PLANS

1. Work plan Tanzania

Site selection
We have selected 5 Sites in 3 Districts within Kagera region which are Karagwe, Bukoba and Kyerwa districts. In Karagwe the sites are Nyashozi and Chanika ward. In Kyerwa district, the sites are Nyakatundu and Isingiro ward. In Bukoba district the site is Izimbya ward. These are the main places where they grow beer banana and do processing. All actors along the value chain will be selected randomly.

Actors: Farmers (producers), processors (Artisanal, industrials and semi-industrials processors), whole seller’s and retailers

Sample size will be 184 respondents including women and men

Methods:
Interview: individual and key informants' questionnaire

Focused group discussion: Will be done with female and male alone and with a mixed group of female and male. We will do FGDs with farmers and processors.

1. Individuals questionnaire
   i) Farmers (n=100)
   ii) Processors (n=20)
   iii) Traders (n=39) (Transporters=13, Retailers=13, Wholesalers=13)

2. FGD
   i) Farmers
   ii) Processors
   iii) Consumers

3. Key Informants
   i) Elders (2 per site) =10
   ii) Extensionists (1 at Region level ,1 at district level and 1 at every village) =9
2. Work plan Uganda

(A) Sites and Site selection

A list of all districts producing bananas will be made, out of it 3 district will be selected (Biased towards districts that grow lots of beer bananas)

- Probable Districts (Kibaale, Kiboga and Sembabule)

From the each of the 3 districts, one sub-county will be selected (Biased towards Sub-counties that grow lots of beer bananas)

In each sub-county a list of banana beer producing and processing farmers will be obtained from the Production department.

Out of the list a random selection of farmers, processors and traders will be done.

(B) Categories of groups of people that will be contacted or interviewed

1. FGD
   a) Farmers / Farmers associations (1 group per site but will be divided into 3 men alone, women alone and women/men)
   b) Processors (1 group per site but will be divided into 3 men alone, women alone and women/men)
   c) Consumers(1 group per site but will be divided into 3 men alone, women alone and women/men)

2. Individuals
   a) Farmers (50 per site=150)
   b) Processors (Artisanal, semi-industrial and industrial) 20 per site=60
   c) Traders (Transporters, Retailers, Wholesalers)5 per category 15 per site=45
   d) Consumers (50 per site=150)

3. Key Informants
   a) Elders (5 per site)
   b) Extensionists (Local Government) (1 at the district and 1 at the sub-county level)
   c) Regulators (1)
   d) Export promotions board (1)
   e) Uganda Chamber of Commerce(1)
   f) Uganda manufactures Association(1)
   g) Enterprise Uganda(1)

Note: Industrial and semi-industrial respondents will be identified at National level,
3. Work plan Burundi

1. Sample size

Three Provinces producing banana: Cibitoke, Bujumbura rural and Muyinga will be selected with 2 communes / province. Sample size for VC actors will be

- 10 farmers/commune
- 5 processors/commune,
- 2 traders/commune,
- 5 retailers/commune

Totalling to 60 farmers; 30 processors; 12 traders and 30 retailers

Sampling methods will be based on information collected during interviews with key informants (administration, agronomists, farmer’s organization, etc.)

Selection Criteria: farmers growing banana, banana processors, banana collectors, banana beer traders, banana beer retailers. Farmers, processors, traders and retailers will be randomly selected for individual interviews and focus group discussions.

2. Methodology

- Béatrice and Maxime will develop the tool and select the sites.
- Béatrice and Maxime will train the students on how to conduct individual interviews and will test the questionnaire for individual interviews in the presence of the students during the activity of tool testing.
- The students will collect the data using the questionnaire for farmers, processors, traders and retailers.

Individual interviews using a questionnaire will be conducted for farmers (60), processors (30), traders (12) and retailers (30). 8 students will be recruited to conduct individual interviews using a questionnaire. Béatrice and Maxime will supervise the collect of the information and Data Entry.

Focus group discussion (FGD)

Béatrice and Maxime will conduct focus group discussions and will supervise the students during the data collection.

- 2 FGD per commune for farmers (1FGD for 10 men, 1FGD for 10 women)
- 2 FGD per commune for processors (1FGD for 5 men, 1FGD for 5 women)
- 2 FGD per commune for traders (1FGD for 5 men, 1FGD for 5 women)
- 2 FGD per commune for retailers (1FGD for 10 men, 1FGD for 10 women)

Béatrice and Maxime will supervise the data entry and data analysis and will write the report

Budget still under discussion
4. Work plan Rwanda

1. METHODOLOGY

The approach that will be used for this research will consist in desk reviewing the available literature, data collection from secondary and primary sources as well as analysis of data using quantitative and qualitative methods.

Literature review

For purposes of the literature review and document analysis required in the assignment, a comprehensive desk study and web search will be undertaken at the beginning of the assignment and augmented as the assignment progresses and new insights are gained. More specifically our approach will involve collecting a range of secondary data from policy documents, reports, published and unpublished papers and any relevant document on banana based beverages value chain. With the review of these documents, insights would be gained about some of issues related to the contributions of banana based beverages to livelihood for cash and nutrition, food hazard analysis and gendered value chain analysis and these will form the bases for formulating the questions and discussion points for the interviews. Thus, in addition to this review questionnaire to be used for collecting relevant information will be developed and its draft will be circulated for comments and inputs.

Study area and sample design methodology

The study will cover two out of four provinces of Rwanda; the Eastern and Southern provinces were selected due their high proportion of banana growers and the quantity of banana production associated. In fact, according to the recent agricultural survey, the first District to produce more beer banana (Muhanga District) is located in Southern Province while the Eastern Province has produced the highest quantity of both cooking and beer bananas (64.9 % and 33.4% respectively).

In addition, according to the inventory carried out in 2010 by the Ministry of Commerce and Industry, around 77 % of the existing banana processing units are located in both provinces.

A four-stage clustered, randomized procedure will be used to select a representative sample of banana based beverages value chain actors throughout the two provinces as follows:

1. First stage: from each province a total number of banana processors will be identified and five of them will be randomly sampled.
2. Second stage: for each processor, 5 members (two managers and three workers) will be selected for interview.
3. Third stage: for each processor a list of suppliers (individual farmers/cooperatives/ middle men) and clients (Consumers/ traders/) will be established.
4. Fourth stage: from the list provided, 10 suppliers (banana growers/ middle men), 3 traders and 6 consumers will be randomly selected for interview.

Proposed sample composition and size

Managers to be interviewed: 20
Workers to be interviewed: 40
Farmers to be interviewed: 60
Traders to be interviewed: 30
Consumers to be interviewed: 60
Middle men to be interviewed: 40
Total: 250
Apart from the formal survey, a check list will be established and used for both focus group discussion and key informant interviews.

*Budget still under discussion*
5. Work plan DR Congo

In DRC, North-Kivu and South-Kivu are the provinces that grow 56% of country production of east African Highland Banana (EAHB) (Nzawele et al., 2009; Nzawele, 2012). They constitute the major area of beverage banana making and hence were selected for value chain and livelihoods analysis.

Sites and Site selection

A list of all sites in districts producing bananas will be made, out of it two sites will be selected (Biased towards areas that grow lots of beer bananas types (Mbidde))

Probable sites:

North-Kivu (Beni, Lubero, these may change after reconnaissance survey)

South-Kivu (Kabare, Walungu, these may change after reconnaissance survey)

From each of the two sites, one sub-site will be selected (Biased towards Sub-sites that grow lots of beer bananas). In each sub-site a list of banana beer producing, processing farmers and consumers will be obtained from the communities’ leaders and Key informants through group discussion. Out of the list a random selection of farmers, processors and traders will be done.

Categories of groups of people that will be contacted or interviewed:

1. Individuals
   - Farmers: 30 per site = 60 per province = 120 Total
   - Processors (Artisanal, semi-industrial and industrial) 15 per site = 30 per province= 60 total
   - Traders (Transporters, Retailers, Wholesalers) 5 per category for three categories per site = 27 /site = 30 per province = 60 total

2. Focus group discussion (during reconnaissance survey)
   - Farmers / Farmers associations (1 group per site but will be divided into 10-18 men alone, women alone and women/men who will be available)
   - Processors (1 group per site but will be divided into 10-18 men alone, women alone and women/men)
   - Consumers (1 group per site but will be divided into 10 men alone, women alone and women/men who will be available that day)

Key Informants
   - Elders (5 per site)
   - Extensionists (Local Government) (1 at the district and 1 at the division (in French: collectivité) level)
   - Regulators (2)
   - DRC Provincial Agriculture Inspection (2)
   - DRCongo Provincial Chamber of Commerce (2)
   - DRC Provincial Manufactures Association (2)
   - Federation of Congolese Enterprise (FEC) (2)

Budget still under discussion