Gender roles and constraints in the green cooking banana value chain: evidence from southwestern Uganda

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Abstract

This paper provides an overview of how women and men engage in the green cooking banana value chain (VC) and the specific constraints they face. Several recommendations for gender-responsive interventions are made. Results are based on quantitative and qualitative data collected in 2015 in southwestern Uganda in the districts of Rakai and Isingiro from actors along the VC via surveys, key informant interviews, focus group discussions (FGDs), seasonal calendars and daily activity schedules. Results show that the green cooking banana VC is dominated by men, with only 30% of the actors in the VC being women. Social norms and business entry requirements pose major constraints to women's participation in this VC. Men and women are involved in various roles along the VC, with some roles mostly performed by men and others by women. Production is majorly controlled by men, who own and oversee most of the plantation management and sales. A few women own plantations, and acreage is usually smaller (1.5 ha) than that of men's plantations (2.4 ha). Women dominate the retail node (70%) but are absent at the wholesale node. The retail node is characterized by the highest PHL (18.42%) and the lowest profit margins. Men retailers incur higher physical (8.45%) and residual (UGX 10.084.5) losses compared to women retailers (physical (7.35); residual (UGX 9.112.5)). Women mainly access credit from informal sources that do not require collateral such as farmers' groups. We recommend promoting evidence-based advocacy of women's rights to land, and developing strategies aimed at developing financial products, such as loans, that respond to the needs of women farmers. VC analyses should include gender roles to give due recognition to the contributions of men and women VC actors.

Keywords: gender roles, green cooking banana, value chain analysis, gender constraints, agricultural value chains

INTRODUCTION

Value chain analysis (VCA) is a useful analytical tool that helps to identify the overall trends within chains and leverage points for technical interventions (Taylor, 2005). It has the potential to expose strategic and operational misalignments, and the consequential misallocation of resources, and hence provides opportunities for improvements aimed at creating value and sustainability (Fearne et al., 2012). VCA can provide valuable insights for equitable VC upgrading, especially for agricultural VCs, which are often composed of formal and informal chains operating in parallel for the same product with mainly smallholders involved in the informal chains, (Lybbert et al., 2017). VCA involves the identification of products' flows and the links between activities through the stages of the chain, while evaluating each stage in order to determine challenges that need improvement (Gereffi and Fernandez-Stark, 2016). Furthermore, chains are broken into constituent parts, enabling an understanding of chain actors at each stage, their functioning and their relationships. This way, opportunities for improving the functioning of specific actors and their contribution to the overall performance of the chain can be identified. In general, VCA should incorporate research on a range of aspects including environmental, social and economic characteristics

(Fasse et al., 2011). Integration of various aspects in VC upgrading is important for their sustainability. However, VCA has largely focused on economic aspects and not paid adequate attention to social and other aspects (Bolwig et al., 2010) thus risking producing recommendations which ignore the benefits offered from improving these aspects (Fearne et al., 2012).

Gender is an important social aspect that needs to be fully understood in VCA as the roles performed by VC actors are usually gender specific and have implications for VC development actions (Barrientos, 2001; Harman Parks et al., 2014; Quisumbing et al., 2014). Gender inequality is one of the factors that increase the vulnerability of VC actors. Factors such as access to assets, gendered education differentials and the nature and value of economic activities affect the way in which men and women participate and gain in agricultural VCs (Coles and Mitchell, 2011). Also, despite their contributions in especially the farm activities, women's contributions in VCs have remained invisible (Senders et al., 2012). Therefore, integrating a gender analysis in VCA is important to get a thorough understanding of actor-specific roles, challenges and opportunities within VC development. It also enables allocation of resources to people who actually do the work, thus providing entry points for working with men and women, improving their participation and addressing their differentiated needs (Laven and Verhart, 2011; KIT Agri-ProFocus and IIRR, 2012).

The green cooking banana VC plays an important role in the overall income generation and food security of smallholders in Uganda. The crop provides 17% of the daily caloric requirements (Fiedler et al., 2013) and average annual household incomes of about USD 1,244 in the country (Kilimo Trust, 2012). The western region leads in banana production in the country (Uganda Bureau of Statistics, 2015), and a growing cooking banana trading industry exists in this region, linking producers to local, urban, regional and international markets. However, the cooking banana industry is faced with various production and marketing challenges, including postharvest losses (PHL) (Ouma and Jagwe, 2010; Kikulwe et al., 2018) which adversely affect its functioning and tend to increase the vulnerability of actors. To seek solutions to these challenges, it is important to understand the structure of the VC and all operations, to unearth the issues that currently bedevil effective functioning. Given that men and women are engaged in various activities along the VC, it is important to map their involvement as this would enable identification of their roles, how they are affected by the challenges and how to involve them in chain development interventions (Nguyen et al., 2015). Moreover, there is very limited literature on gender in the banana VC, with most of the available information found in unpublished project reports. Even the basic gender-disaggregated statistics are often lacking.

This paper contributes to filling these knowledge gaps by mapping the green cooking-banana VC in southwestern Uganda from a gender perspective and assessing the constraints men and women actors face. Specifically, the paper identifies the roles of men and women in production and marketing and the constraints they face with regards to business entry requirements, PHL and access to resources and services.

METHODOLOGY

A gender-sensitive analysis of the green cooking banana VC was conducted in southwestern Uganda in the districts of Rakai and Isingiro, between July and September 2015. Isingiro and Rakai districts are among the highest cooking banana-producing districts in Uganda (Uganda Bureau of Statistics, 2015). Within each district, the highest banana-producing subcounty (Rugaga in Isingiro and Dwaniiro in Rakai) was purposively selected. In each subcounty, five parishes (Buyamba, Dwaniiro, Lwakalolo, Kayonza, Kaleere in Dwaniiro subcounty and Nyabubare, Kyampango, Kyarubambura, Kilyabulo and Kabaare parishes in Rugaga subcounty) were randomly selected to participate in the study. Participating households were selected randomly based on a list of households provided by the local leaders. A cross-sectional, mixed methods design in which data were collected from actors along the cooking banana VC was adopted for the study. A total of 247 surveys (survey respondents by gender are shown in Table 1), 19 key informant interviews, 18 FGDs, including 4 seasonal calendars and 4 daily activity calendars, were conducted. Key informant interviews

were conducted with extension workers, NGOs involved in service delivery in the VC, financial institutions operating in the study sites and farmer group leaders, while FGDs were conducted with producers and retailers. FGDs were held with separate men and women groups to enable them to share their opinions freely without external pressure (Quisumbing et al., 2014). The recorded interviews and FGDs were transcribed verbatim, after which the data were coded into general topics to allow unique patterns to emerge before identifying cross-case patterns.

Table 1. Survey respondents by gender.

Respondent categories	Number of male respondents	Number of female respondents	Total number of respondents
Producers	70(70)	30(30)	100(41)
Bicycle traders[a]	7(100)	0	7(3)
Brokers[a]	10(100)	0	10(4)
Retailers	12(30)	28(70)	40(16)
Wholesalers[a]	10(100)	0	10(4)
Consumers	30(37)	50(63)	80(32)
Total	**139(56)**	**108(44)**	**247(100)**

Values in parentheses are percentages.
[a]There were no female actors in these nodes at the time of the study.

Within the sampled producer households, surveys were conducted with the person (male or female) identified as the banana farmer. In households where both male and female members were identified as banana farmers, respondents were randomly selected. A banana farmer was defined as a person who owns or manages a banana plot and is involved in making decisions or executing them (Ajambo et al., 2018). Quantitative analysis was conducted using Stata software.

RESULTS AND DISCUSSION

Gender-disaggregated mapping of the cooking banana VC

A VC map is often used to visualize product flows, the key actors and their roles, and the kinds of networks and relationships that exist (Bernet et al., 2006). Gendered VC mapping is important for understanding gender inequalities and identifying avenues for upgrading capacities (Masamha et al., 2018). In this study, a gender-disaggregated cooking banana VC map was generated (Figure 1) to understand the distribution, roles and networks of men and women actors. Results show that overall, the VC is dominated by men (70%). Men and women actors are also concentrated in specific segments of the VC, with men more present in the production and wholesale nodes and women more concentrated in the retail node. Men own and manage most of the banana plots and all the wholesale businesses, whereas the retail segment is dominated by women who are largely involved in roadside and market vending. The distribution of men and women actors in this VC is similar to Mayoux and Mackie (2007) and World Food Programme and USAID (2016), who note that VC segments that require resources such as land as well as the wholesale nodes tend to be dominated by men while women tend to dominate small scale trade. Such distribution is often influenced by gender disparities in access to resources (Ponte, 2010) and has a direct impact on men and women's access to economic resources and their economic power within VCs. Specifically, the concentration of women in small-scale trade could hamper their ability to optimally enjoy the full benefits accruing from VCs.

As part of the mapping exercise, a gender division of labor (GDoL) was constructed for tasks across the VC to highlight the contributions of men and women. Results show that men and women perform various activities along the VC with some activities mostly done by men, others by women and others jointly. For instance, in the production segment, the activity of weeding is predominantly done by women while activities such as de-trashing, de-budding and planting are jointly performed. Most (92%) of the women in the surveyed households, contribute to farm labor even when they do not individually own banana plots, a scenario

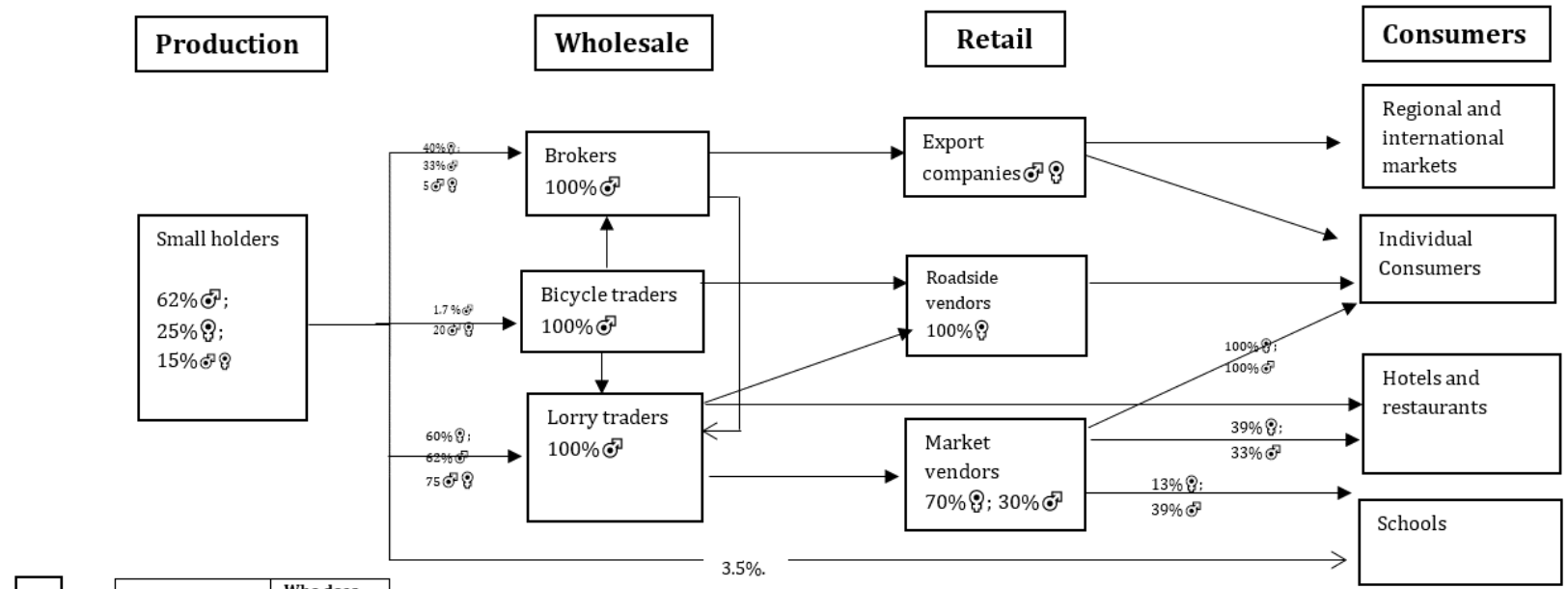
which is common for most agricultural VCs in Sub-Saharan Africa (Kabahenda et al., 2010; KIT Agri-ProFocus and IIRR, 2012; Jeckoniah et al., 2013). Similarly, for activities in the retail segment, such as off-loading is done by men and peeling is done by women, while the rest of the retail activities are done jointly. It is only in the wholesale segment that all activities are done by men. Clearly, like in other agricultural VCs (Spence, 2012), men and women contribute in different ways to the overall output of the cooking banana VCs. However, women's contributions in the production node tend to be concentrated at farm level, are performed between family responsibilities and attract no direct income. These activities thus risk remaining invisible unless deliberate effort is undertaken to bring them to the fore. Indeed, literature suggests that women's valuable contributions in agricultural VCs have remained inadequately acknowledged and poorly visible mainly because they are not performed in the mainstream (Shackleton et al., 2011; Spence, 2012). A GDoL as an integral part of a VCA can thus be useful for highlighting the contributions of men and women, for guiding targeted interventions aimed at addressing gender issues in VCs and for creating awareness about these issues among stakeholders.

Understanding horizontal networks (e.g., farmer organizations) and vertical ones (e.g., contracting arrangements) is an important aspect of understanding the functioning of agricultural VCs (Mayoux and Mackie, 2007; Vroegindewey, 2015). The mapping exercise explored networks and how men and women are engaged in these. Findings revealed very low levels of horizontal linkages as most farmers sell bananas as individuals and sharing of market information is minimal. Regarding vertical linkages, results revealed emerging contractual arrangements between 62% of the surveyed farmers and wholesalers. The contractual arrangements involve wholesalers advancing finances to farmers-owners of banana plots- and in turn harvest bananas as repayment which enabled farmers to access short-term credit. However, since banana plots are mostly owned by men, direct participation in contract farming by women was limited, and they were largely left out of the benefits that accrued.

Results also revealed issues with contracts, such as not specifying the duration of the harvest, the price, quantities and quality of the bananas. According to key informant interviews and FGDs, farmers are left at the mercy of the traders who set the price and determine quality at the time of executing the agreement. The contracts were described as largely exploitative with traders making profits at the expense of the farmers, which can be an indicator of ill-developed marketing systems. In addition, the contracts were limited in scope since they did not include resources and services normally associated with contract farming, such as access to technology and inputs and extension services (Jia and Huang, 2011; Ariho et al., 2015; Navarra, 2018). The limited scope undermines the potential to improve the whole functioning of the VC and to include specific benefits for women (Sexsmith et al., 2017).

Business entry requirements and the participation of men and women in the VC

The study also explored the major determinants of engaging in the different sectors of the green cooking banana VC and how these affect participation and performance of men and women actors. These determinants are often believed to influence the representation and performance of men and women in VCs (Klapper and Parker, 2011). Results show that land ownership is the biggest entry determinant at the production segment of this VC. In the study sites, farmers who do not own land access land for crop production through renting land, but this is not possible for is a perennial crop like banana. Banana plantations in the area were estimated to have a lifespan of 50 years, raising issues of land tenure security in case of rent. Land ownership was found to be limited among women, with only 25% reporting individual ownership of land. This excluded most women from the mainstream of this segment of the VC. Even for the few women who owned land individually, results show that the sizes of men-owned banana plots were significantly bigger ($t=1.44$, $P=0.0765$) than women-owned plots. On average, the surveyed households had 2.3 ha (SD=2.6 ha) of land under banana, and women-owned plots were approximately 1.5 ha (SD=1.5 ha) compared to the men counterparts who owned about 2.4 ha (SD=2.9 ha). FGD estimates affirmed that women-owned plots were generally smaller than those of men, an indicator of the gender inequalities in this VC.



Activities & GDoL

	Who does what?	
Activity	♂	♀
Land preparation	***	*
Planting	**	**
Weeding	*	***
De-suckering	***	*
De-trashing	**	**
De-budding	**	**
Uprooting corms of harvested plants	***	*
Digging water trenches	***	*
Harvesting for food	*	***
Selling	***	*

	Who does what?
Activity	♂
Identifying producers with required volumes and varieties	****
Harvesting for sale	****
Collection/Bulking	****
Packaging(export)	****
Loading on trucks	****
Transporting	****

	Who does what?	
Activity	♂	♀
Offloading	****	
Sorting and grading	**	**
Packaging (Export)	**	**
Peeling (limited)		****
Selling	**	**

Key: ♀= Female, ♂=Male, ****= only done by, *** mostly done by, ** jointly done by, GDoL=Gender Division of Labour

Figure 1. The structure of the cooking banana VC and the distribution of men and women actors.

At the wholesale segment, key informant interviews and FGDs showed that finance capital is the biggest business entry determinant. It was estimated that finance capital of approximately $ 2000 per truck of 400 bunches capacity was required to start up a wholesale business. Start-up costs include bulk purchase of banana, transport, and labor costs both at farm level (harvesting, packaging and loading) and during transportation. Further results showed that wholesalers transport bananas at night when the temperatures are low to minimize losses due to ripening. This transportation practice, however, excludes women from this segment of the VC, as moving at night is seen as inappropriate for women: "How can a woman move around in the night…it is not good! No man will be happy with such a woman as a wife…the wholesalers climb on top of lorries…no woman can do that…that work is for men…" (Women FGD).

At the retail segment, finance capital is still the biggest entry determinant, but the amount required is much less compared to a wholesale business. Approximately $ 300 is enough to start up a retail business with the main startup costs including: 1) rent for the market stall which is between $ 16 and 19 per month; 2) communication; 3) market tax of $ 6 cents per bunch offloaded; and 4) purchase of bananas. Also, depending on the social relationship between the retailers and wholesalers, it was a common practice for wholesalers to give bananas to retailers on credit and they pay back after selling. Off-loaders also take two fingers from each bunch that they off-load as payment. There is no cash transaction for off-loading.

These results suggest that the differences in entry requirements determine concentration patterns of men and women in the cooking VC and reflect gender-based differences driven by gender-related barriers that are often higher for women. For instance, the low capital requirement at the retail node might explain the concentration of women in this segment since their opportunities to access start-up capital are often limited compared to men due to discriminatory practices (Derera et al., 2014). Moreover, enterprises that require less funding often have a lower potential for growth and development (Fraser et al., 2015) which suggests the plight of women actors in this VC. The influence of business entry requirements on the choices of men and women VC actors is subject to several factors in the business environment including cultural and social factors. For example, the low ownership of land by women is largely due to the cultural practice of men inheriting land from their parents as boys, which is not the case for girls who culturally cannot inherit land from parents. Addressing issues in the business environment therefore, can help promote gender equality in the cooking banana VC with a focus on promoting economic activity and growth for women.

Postharvest losses and gender

The study also explored PHL along the cooking banana VC and how these are experienced by men and women actors. Results show the VC is characterized by high PHL of up to 15% (Kikulwe et al., 2018) with the highest (18%) experienced in the retail node (Figure 2) which is dominated by women. This highlights this segment as a critical loss control point in the cooking banana VC. Results of the distribution of PHL among men and women retailers show that men retailers experience slightly higher PHL compared to their women counterparts, but the difference is not significant. Physical and residual losses most affect men retailers while economic losses most affect women retailers (Table 2). These differences could be due to gendered market dynamics, for instance women peeling (peeling is a traditional role for women) the bananas (including the bruised ones) before sale thus attracting more consumers and minimizing physical losses due to, for example, rotting of bananas. These results and similar literature (Rugumamu, 2009) suggest that gender inequalities are among the underlying causes of PHL. Exploring the causes of losses in the cooking banana VC, including the social and gender issues, is important for providing insights to bridge the gender gap and design appropriate interventions to effectively reduce PHL in the VC.

Table 2. Distribution of PHL at the retail segment by gender.

Type of loss	Scarcity		Surplus		Total losses	
	Male	Female	Male	Female	Male	Female
Physical loss (%)	6.4	5.8	10.5	8.9	8.45	7.35
Economic loss (%)	6.8	6.1	11.5	12.6	9.15	9.35
Residual loss (UGX)[a]	12,206	11,273	7963	6952	10084.5	9112.5

Exchange rate USD: UGX 3600.

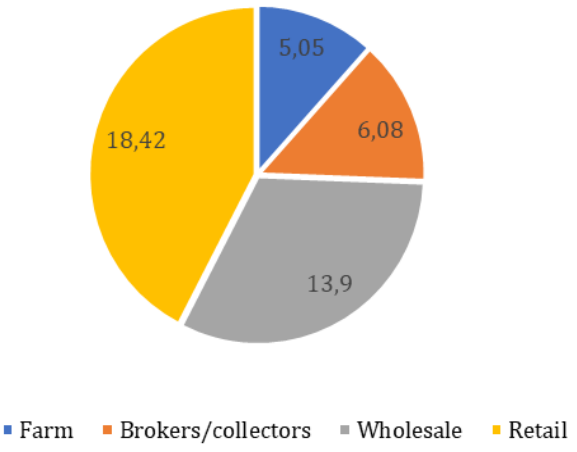


Figure 2. Postharvest losses along the cooking banana value chain.

Men and women access to resources and services and VC participation

The study also explored men and women's access to resources and services. Results show that men have more access to the required resources and services to participate in the production and wholesale segments of the VC compared to women actors. At the production segment, for instance, results show that in 79% of the surveyed households, selling of bananas is largely a man's task. FGDs revealed that women of different categories (Table 3), apart from the few who own banana plots, have limited power and freedom to sell bananas and make related decisions. Such dynamics exclude women from markets and limit their access to services such as market information (The World Bank, 2008).

Table 3. Power and freedom to sell and to make related decisions for selected women groups.

Categories	Rating	Reasons for rating
Widows	5	Manage and make all related decisions
Married women	2	-Involved in production activities but cannot sell even a bunch without permission from the husband -It is the man to show you which bunch to sell (if at all) and consume at home -Most women sell stealthily -Some women allocated banana plots, but they are too small and can only sell a few bunches -most used for food -Some men sell bananas before harvesting (contractual arrangement) without the knowledge of the women
Young unmarried women	1	Banana plots belong to parents and guardians No capital to invest in own banana plots

1 = almost no power and freedom; 2 = only a small amount of power and freedom; 3 = power and freedom to make some major decisions; 4 = power and freedom to make many major decisions; 5 = power and freedom to make most/ all major decisions.

Study results also showed that women across the VC were more constrained than men

in access to credit from financial institutions. At farm level, for instance, most farmers use banana plots as collateral to access credit from, but since most women do not own plots, they mainly access credit from informal sources, such as farmer's groups. Even widows and those allocated plots by husbands were largely excluded as they only acted as caretakers. Such inequalities among men and women relating to ownership or access to productive resources and opportunities exist among women across regions (Wakhungu, 2010; Quisumbing et al., 2014) and they do not only disadvantage women's involvement but also affect the overall functioning of VCs.

CONCLUSIONS

This paper analyzes the banana VC in Uganda from a gender perspective. It also presents gender-disaggregated results, contributing original insights into the roles of men and women in agricultural VCs, both as producers and entrepreneurs, and how these can be used to design interventions aimed at upgrading VCs while promoting benefits for male and female actors. The gender-disaggregated mapping incorporating a GDoL has shown that gender inequalities influence the distribution of men and women actors along the VC, the roles they perform, the kind of networks they engage in and how they benefit from them. Women are concentrated in the retail segment dominated by low capital investment, small-scale enterprises while the men dominate production and wholesale. This distribution pattern is also influenced by the business entry requirements. Even when they do not own banana plots, women make important contributions to banana production in this VC through their farm level activities. The study also showed that women are largely excluded from emerging contractual arrangements in the VC and the benefits thereof and have limited access to the necessary resources and services, such as credit, compared to men. The findings also suggest that gender inequalities are part of the underlying causes of PHL in the cooking banana VC. In general, the study highlights the need to strengthen women's participation in the VC and the benefits they accrue.

We recommend VCAs to incorporate a GDoL analysis to give due recognition to the contributions of men and women VC actors and for providing insights into the concentration of roles which is useful for designing targeted interventions and creating awareness about existing gender issues among stakeholders. Upgrading options for this VC also need to integrate gender-responsive professional assistance aimed at changing the conditions under which the emerging contractual arrangements operate and to broaden their scope to include benefits for women actors. Also contributing to gender equality should be part and partial of upgrading options for the cooking banana VC. Evidence-based advocacy of women's rights to land to elucidate aspects that impede women's access to land and the benefits that accrue is still vital. We also recommend development of strategies aimed at developing bank products such as loans tailored to the needs of women. Further research could investigate the underlying causes of PHL in the VC from a social/gender perspective.

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