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Women in sweet potato marketing in Papua New Guinea

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Abstract

Women play an important role in agricultural production and marketing in PNG. However, their contribution to the local economy and household livelihoods has not been maximised due to the lack of support. This study, funded by the Australian Centre for International Agricultural Research, identifies issues facing PNG women farmers in the highlands in their endeavour to generate income from sweet potato marketing. Two group discussions were held in Goroka and Mount Hagen. The results indicate that specific marketing issues facing women farmers are: heavy work load, high cost and unreliable transport, poor facilities at the open markets, harassment and violence against women and uneven distribution of income within the household. Group marketing, based on the CI&I process to improve business and marketing skills, appears to be a possible solution to many of the problems facing women farmers.

Key words: Participatory action research, CI&I, gender and development, marketing, PNG agriculture

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1 INTRODUCTION

Sweet potato is a major staple food crop in Papua New Guinea, providing 64% of total dietary intake (as measured by weight). Annual production is around 3 million tonnes with 75% of this crop produced in the Highlands. Most sweet potato produced in the Highlands is used for home consumption as food (about 75%) and as animal feed for pigs (25%). It was estimated that about 1% of total sweet potato production was sold but mostly close to where it was grown. The potential for marketing sweet potato from the highlands to coastal markets in Lae and Port Moresby has increased significantly in recent years due to increasing urbanization and the decline in the value of the Kina. However, postharvest losses from long distance marketing are high, with 30-50% of product becoming unsaleable on arrival in Port Moresby due to rots and/or physical damages.

In a scoping study, Spriggs (2005) found that (1) almost all the sweet potato marketed was sold informally by producers themselves on the roadside and open markets; (2) most sweet potato producer-seller are women; (3) transaction costs are high due to high transport costs, heavy postharvest losses and diseconomies of scale; and (4) marketing infrastructure is inadequate and often poor; lack of market information on prices and market requirements; and poor facilities for transport, storage and at the open markets.

The scoping study was later expanded and developed into an ACIAR project, entitled “Improving marketing efficiency, postharvest management and value addition of sweet potato in PNG”. The overall aim of the project is to improve the livelihoods of farmers and other participants in the sweet potato supply chain in PNG by reducing postharvest losses and improving quality outturn. Partner organisations for the ACIAR project include: University of Canberra, DPI NSW, Fresh Produce Development Agency (FPDA), National Agricultural Research Institute (NARI) and Rural Women’s Development Initiative (RWDI).

The project has three key components: economic, technical and social. The economic component focuses on the institutional/relational aspects of the supply chain while the technical component focuses on issues related to postharvest handling and variety selection. The social component focuses on marketing issues pertaining to women because of their involvement in the sweet potato supply chain from farm to market and the need for more support to address those issues.

Several activities have taken place since the inception of the project in January 2008. First, in February 2008, a project planning workshop was held in Goroka, where the research team and sweet potato farmers came together to develop the workplans for mapping the sweet potato supply chains from major producing regions in the highlands (Goroka and Mt Hagen) to coastal markets in Lae and POM. The main research activities for the socio-economic component in year 1 included: interviews of producer-sellers in the highlands, road transporters (running business between highlands and Lae/Madang), shipping companies (providing sea transport from Lae to POM) and institutional buyers in Lae; and group discussions with women groups in Mt. Hagen and Goroka. In January 2009, results from the supply chain mapping were presented at a stakeholder workshop in Goroka, from which priority issues were identified and action plans developed for implementation in year 2. As part of the action plans, in July 2009 a workshop was conducted to improve communications between farmers and buyers. This paper presents the results from the group discussions with women producer-sellers conducted in 2008 and the workshop conducted in 2009. The paper ends with a proposed workplan for women in 2010.

2 SWEET POTATO PRODUCTION AND CONSUMPTION IN PNG

Total production of sweet potato in PNG has been estimated at around 3 million tonnes (Bourke 2000) representing 64% of the total production of local staple food crops (banana, sago, yam, cassava and taro) in the country. No other staple contributes more than 10 % (Bourke and Vlassek 2004). About 75% of the sweet potato production takes place in the Highlands. However, substantial quantities are also marketed, either locally or to coastal cities such as Lae, Madang and Port Moresby. Table 1 below shows the production of sweet potato in the top 10 provinces. Note that the top 5 producing provinces are in the Highlands.

Table 1: Annual production of sweet potato in PNG (in thousand tonnes), 2000

Province	Production
Southern Highlands	620
Eastern Highlands	470
Western Highlands	426
Enga	341
Simbu	295
Morobe	195

Bougainville	93
Madang	78
Oro	53
Central	49

*Source: Bourke and Vlassek (2004)

For sweet potato consumption, Gibson (2001a) estimates that sweet potato is by far the most important food component of the national diet (Table 2).

Table 2: Per capita food consumption (in kg) in 1996*

	Rural	Urban	PNG
Sweet potato	299	42	260
Banana (cooking and sweet)	90	47	83
Taro (and Chinese Taro)	68	23	62
Greens, vegetables, nuts, etc.*	68	20	61
Coconut	42	51	44
Sugarcane	40	10	35
Rice	24	66	31
Yam	31	9	28
Cassava	27	9	25
Sago	21	33	23
Other	96	186	112
Total	806	496	764

Source: Gibson (2001a)

* Excludes abika (11 kg/person/year in PNG) and potatoes (3kg/person/year in PNG)

Note that there are substantial differences in the diet of rural and urban households. For sweet potato, annual per capita consumption in the rural area is 299kg, compared to 42kg in the cities. By contrast, annual per capita consumption of rice in rural areas (24kg) is only about one-third of that in urban areas (66kg). This is a result of the lack of market penetration by imported foodstuffs, especially rice, into rural areas and locally produced foods into the urban areas due to high transport costs. Research has shown that those who consume sweet potato in Port Moresby and Lae are mainly immigrants from the Highlands (Benediktsson 2002; Gibson 2001b). There is

also regional difference in staple food consumption. For example, sweet potato is the main staple food for highlanders, while banana, taro and sweet potato constitute a more diverse diet for coastal people.

3 WOMEN IN SWEET POTATO SUPPLY CHAIN

Women in PNG are known to be primary producers and sellers of food crops (vegetables and root crops). For sweet potato, it was estimated that 68% of sellers in the Port Moresby open markets are female, while for Lae the figure is 95% and in the Highland towns, roadsides and villages it is over 98% (Benediktsson 2002). Women's incomes from marketing surplus food crops may be small compared to what men bring in from cash crops (such as coffee, cocoa, copra, oil palm, rubber and betel nut). However, they are in safe hands¹ and provide a constant cash flow to the family and contribute greatly to food security and nutrition of the family and children's education. Women's significant contribution to the community and economy is recognized; however, support to women is limited, ad hoc and poorly funded compared to assistance afforded to traditional cash crops. More attention and assistance to women farmers are needed if significant progress is to be made in improving food security and reducing poverty. This study is an attempt to identify and address some of the issues facing women.

4 WOMEN'S GROUP DISCUSSIONS

Two focus group discussions were held in Goroka and Mt Hagen in September 2008. The objectives of the group discussion were: to understand women's role in sweet potato production and marketing, identify key issues facing them, and to develop strategies which are appropriate to their unique socio-economic circumstances.

A total of 21 female farmers attended the one-and-a-half-day workshop; 8 were from Eastern Highlands Province (EHP) and 13, from Western Highlands Province (WHP). They represent more or less all districts in both provinces. All are sweet potato producers and have been involved in both local and long distance marketing. The women have different educational background; most of them have education ranging from Grade 6 to grade 10 but one with no formal education and is illiterate. In WHP, the venue of the workshop was at Maria Kwin Resource Centre and in EHP, the Vena Ritini Numuni Conference Centre in North Goroka.

¹ It has been reported that 75% of women's earnings is spent on the family, compared with 25% from men.

4.1 Day 1

On the morning of Day 1, members of the research team met to finalise the workshop program and questions to be discussed. About lunch time, participants arrived at the venue from their respective villages and had light lunch at the venue. The workshop commenced at 1.00 pm. It started with the introduction of all participants; participants paired up and interviewed each other about their names, where they come from, what they do, what their spouse do, number of children, and one thing in life they like most and one thing they dislike. Participants would then take turns to introduce their partner based on what they had just learned about each other. The exercise worked well in breaking ice and people had good laughs about the information (and sometimes misinformation) being presented.

After the group introduction, the overall aim of the ACIAR project and the objectives of the social component were presented by the team leader. This was followed by presentations from PNG partner organisations, focussing on their programs and activities targeting women. Key programs targeted at women included:

- the Village Extension Workers' (VEW) Program and the Gender & Youth Program (GYP) of FPDA;
- the Women's Voices in the Food Chain Network of NARI; and
- Food Security Program and Gender Development Program of RWDI (delivered through Community Development Workers (CDWs)).

4.2 Day 2

On Day 2, the group was divided into 3 sub-groups and each subgroup was asked to discuss their personal experiences in sweet potato production and marketing and issues and problems encountered. The staff assisted each subgroup in writing up the discussions on butcher papers, which were then presented by the women representing their subgroups.

Three key issues being discussed were: production and marketing, division of labour and distribution of income. Specific questions discussed are:

A. Sweet potato production and marketing

- What preparation goes into sweet potato marketing destined for long distance and local markets?
- How are the sweet potato packed and handled?
- How are transport arranged?

- How long does it take to get sweet potato to intended market?
- What are some of the factors determining long distance marketing?
- List any problems that you have experienced.

B. Gender division of labour

- How is work divided and shared between family members?
- Who does the marketing of sweet potato and why?
- List any problems that you have experienced.

C. Distribution of income

- Who keeps the income from the sales?
- Who makes the final decision on how to use the income?
- What are some of the main expenses?
- Do you keep any records of how the money is spent?
- Do you have any savings? Do you have any bank account?

4.3 Results from the group discussions

A. Division of labour.

A.1 Land preparation is men's job.

- Males/husbands normally clear the bushes and dig the drains and other relatives come to support if the land area to be cleared is large
- Construct fence if required
- Women cook for their husbands and men who work

A.2 Planting, weeding and harvesting are women's job

- Women look for cuttings
- Those chosen (mainly women) must know how to plant sweet potato in a particular way and build kaukau mounts
- If the area's too large, help is sought from other women
- When sweet potato is grown in the garden, it's the daughter's and the mother's job to look after it, like weeding, watering and so on
- Prepare materials such as bags and digging sticks and construct temporary shed for storing harvest
- Harvesting is done between 6 am to 10 am by women and girls in the family as well as experienced women in the areas to help

- Advise diggers to use hands as much as possible and pull out only the big ones and leave the small ones and re-apply mounts on them
- Sweet potatoes are sorted by size and put into small bags and transported from gardens to the near road or shed
- Normally all women, men and young children work together in transporting the sweet potatoes from gardens to a certain location for further sorting and packing

A.3 Packing, transporting and loading/unloading are men's job.

- Sweet potatoes are packed again into big bags (Simkor or coffee bags) by men or hired "professional" packers (all men)
- When the weather is good sweet potato bags can be loaded onto the truck from the house; but when the weather is bad, sweet potato bags are transported (by wheelbarrow if available) to the main road and wait for transport (PMVs or trucks)
- Transport is normally arranged by men/husbands and bags are loaded onto the truck and transported to Lae/ Madang
- Sweet potato is unloaded at the market and carried into the selling place (need to pay for market gate fee and wheelbarrow hired) (all the carriers are market gate keepers are men)

A.4 Local marketing is women's job and long distance marketing is mostly men's job

- Start selling at the market, mostly are sold in different heaps and some are sold in bags
- In EHP the women themselves take sweet potato to long distance market whereas in WHP, most men do it alone but some are accompanied by their wives.
- Women have the skills of marketing and able to sell quickly
- Males feel embarrassed to sit down in the market and sell
- Women possess good marketing skills compared to males
- Women manages the money well from the income of sales of sweet potato

A.5 Decisions on land area to be planted, when to plant, when to harvest and hiring of helpers are made jointly by both man and woman

- Both husband and wife discuss about the land size and amount of labour needed to clear the land
- Both husband and wife normally make the decision as to who and how many people will be helping in harvesting and in setting dates for harvesting sweet potato

- Payment for helpers is either in the form of giving food such as some harvested sweet potato/cooked food/boiled rice or by paying workers K 5 to K6/person /day

B. Distribution of income.

- Women bring home the income and show to her family members including husband and children
- Distribute the income, priority goes to school fees, then food and personal expenses and social obligations
- The best thing about marketing is that women can take charge of the income

C. Problems in sweet potato production and marketing

- Hold up on the highlands highway
- Women are at risk when travelling along the highway by herself
- When there is an oversupply, they make losses
- Costs of transporting sweet potato to long distance markets are very high
- Not sure if they had made any profit from sweet potato sales
- They do not keep any records (women cannot keep proper record because they are either not trained or illiterate)
- Sweet potato goes bad if unable to sell all of them quickly
- There is no proper support system in place to support long distance marketers for women such as accommodation and good storage facilities, etc.
- High cost of labour
- Transport is not readily available and unreliable
- Damages/bruises to SP during transport because of poor handling
- Wet weather, especially during rainy season, speeds up spoilage and damages
- Labour intensive
- Bags too heavy
- Lack of support from children (need advice on how to get youth to work and support parents and how to get men to share some of the household chores)
- Market information (on price and varieties) not available
- Lack of business skills

5 SUMMARY OF KEY ISSUES FACING WOMEN

5.1 Security concern

Women have expressed grave concern over their safety when travelling long distances to sell sweet potato. They always travel with fear of armed hold ups and getting raped. Women in one way or another have experienced an arm hold ups, sexual harassment, pickpockets and theft. They feel especially vulnerable when travelling home with the money after completing the sales. Women from WHP tend to travel together with their husbands to Madang, Lae or Port Moresby. In EHP men would let the women do the marketing alone and wait for them to come home safe with the income.

To avoid losing money to criminals, women in EHP discussed about opening up a bank account to deposit all earnings before travelling home. However, opening a personal bank account is quite difficult because the bank sets certain conditions for opening an account and requires driver's license or passport for identification, which most of them do not have.²

5.2 High costs

All participants complained about the high costs involved in sweet potato production and marketing. One of the major cost items identified is transportation of sweet potato from farm to distant markets. Transport owners charge certain amount per bag of sweet potato. Other costs involved are hiring of temporary labour for clearing the bush, planting, weeding, harvesting and packing, loading and unloading of sweet potato bags. There are increases in the shortage of family labour and in costs for hiring casual labour. It costs K5-6.00 per day to hire labour to assist with the planting and harvesting of sweet potato.³

5.3 Hard work

Women indicated that sweet potato production and marketing is laborious. The workload involved is very high compared to other crops. It involves a lot of physical work and requires more people to get work done. In addition, women do more work compared to their male counterparts. Men perform certain tasks, such as the clearing of bush, making fence, handling, loading and unloading of sweet potato, often with male helpers or hired labour. The women and

² Brearley (2005) also found law and order problems to be the main issue for women, which prevented women from travelling freely and deterred many women from getting involved in marketing. Pickpockets and harassment are common issues at the open market as well as stealing of produce. Many women are also afraid of travelling even short distances because of the risk of sexual harassment or sexual assault. Women are also subject to having their money for gate fee and accommodation stolen on the way to the market or having their takings for the day stolen on the way home.

³ The minimum wage is K2/hour.

female girls collect the runners, plant, do weeding over the growing period (ranging from 6-9 months), harvesting and marketing and often they don't get much outside help.

In addition to sweet potato production and marketing, women at the same time are responsible for the daily household chores, attending to and caring for the sick, the old, the children and livestock and fulfilling social obligations. For cultural reasons, they have no choice but to attend to them. Some indicated that husbands do assist in household chores, but it is not common.

“Lack of support from males” has come out clearly from both group discussions -- male children and some husbands do not help at all in sweet potato production and marketing despite requests from women for their support.

Women would like to do long distance marketing so they can take charge of the income from the sales. However, this is often not the case. In EHP, more women are involved in the long distance marketing of sweet potato, but in WHP, long distance marketing is done mainly by men. Those women who work all on their own indicated that they do not share the income with their children or husbands. Some women claimed that they are in total control of income when men do not assist them at all. However, this is rare. For most women, they have no choice but to share the income because some males can be violent and will do anything to get the money they want.

5.4 Lack of business skills

There is indication of total lack of business skills. None of the participants keep any form of records on all the expenses and income from sweet potato farming. They are not sure whether and how much they had made profit from growing and selling sweet potato. There is also the lack of planning for sweet potato production and marketing and financial planning.⁴ Women indicated that they do some form of planning with husbands by talking to each other on the kind of activities to be carried out, like deciding whom to hire and the number of labour to be hired, the size of the garden, sweet potato variety, work load, how much to pay, etc. However, plans and calculations are made only in the heads, which often become inaccurate and unreliable with the passage of time.

5.5 Marketing issues

A lot of handling of sweet potato is involved in long distance marketing. Sweet potato bags are loaded and unloaded from farm gates to markets places several times. Often carriers drop bags

⁴ Previous studies have shown that the lack of marketing planning has contributed to inconsistency in supply and often oversupply because marketing is often done when there is need for cash for bribe price, school fees or festivals.

without giving due consideration, causing bruises and rots to sweet potatoes. Since there is no reliable transport system in place to move produce, and without proper storage facilities often the bags are left directly under the sun while the farmer looks for transport to move them.

There is lack of appropriate packaging materials for sweet potato. The current Simkor bags commonly used to pack sweet potatoes weighs about 80kg and are too heavy for women or most men to do the loading and unloading of bags at different stops. This means additional costs for hiring casual workers and further abuse of sweet potato bags.

There is a lack of proper marketing infrastructure and market facilities to support women in sweet potato marketing. There is no proper storage facilities to store produce in the market. Women had lost their bags of sweet potato in some of the markets. There is also inadequate space to sit and sell comfortably in the market. Those who arrive earlier may get the best location and enough space. But it is not easy to do that when you have to travel far with frequent delays due to lack of transport and poor road conditions. These results are consistent with Brearley (2005).⁵

There is also the issue of the lack of communication especially to find out market information. All participants indicated that they know nothing about the market in relation to supply and demand situation before they move their sweet potato. If the supply is low then they make good money but if the supply is high, they make losses.

5.6 Training needs

A list of training needs was also identified from the group discussions. They include:

- Crop production
- Marketing skills
- Book keeping
- Gross margins analysis
- Gender training

⁵ According to Brearley (2005), open market facilities are very poor. For example, the Goroka market is overcrowded and if it is full when the farmer-marketer arrives, she must wait until space becomes available. There is limited shelter at the market and few display tables or seats. The vendors are exposed to sun and rain for hours and in wet weather the ground on which they sell their produce turns to mud. There is no water supply for drinking, washing or sprinkling on the produce and so water must be brought from home. There are no toilet facilities or rubbish bins and pigs often roam the marketplace. Women often have to take their children with them to the market but there are no childcare facilities at the market. Women are also subject to harassment at the market (such as paying extra fees for entry to the market). If the farmer is unable to sell all the produce on the day, she may need store this overnight at the market. However, there are no proper storage facilities or cool rooms to help maintain the quality of the produce.

- Sweet potato processing and preservation (value addition)
- Recipes for using sweet potato.

6 STAKEHOLDER WORKSHOP

A one-and-a-half day stakeholder workshop was held in Goroka, PNG on 21-22 January 2009. The objectives were: (1) to provide key finding and an analysis of key issues identified in Year 1 research to stakeholders, (2) to clarify issues and seek feedback from stakeholders, and (3) to identify priority issues with stakeholders for further action in 2009. The workshop was attended by around 40 participants.

6.1 Day 1

In the morning, a total of nine topics were presented, including one presentation from the social component. They are:

1. Farmers, producers-sellers and wholesalers
2. Transporters
3. Institutional buyers
4. Women's perspectives
5. Sweet potato supply chains - where is the damage occurring?
6. What about rots?
7. What can we do about it? Options for improving postharvest management
8. Adding value to sweet potato? Options for new products
9. Varieties - we know they are different but how do they compare?

Many issues, ranging from 3 – 7, were identified by researchers for each topic. Key issues arising from those presentations were collated and re-grouped under seven subject areas:

1. Supply chain – farmers, farmer marketers and wholesalers
2. Supply chain – transporters
3. Supply chain -- institutional buyers
4. Supply chain – women's participation
5. Improving post harvest management
6. Adding value to kaukau – options for new products
7. Variety differentiation and comparison.

In the afternoon, issues for each subject area were written up on butchers' paper and posted around the conference room. Participants were invited to move around the room and examine the lists and to add issues that have been overlooked by researchers. Many issues were added to the lists. This was followed by small group discussions whereby workshop participants selected one of the subject areas in which they were most interested and formed into groups. Each group, led by a table facilitator from the project team, was to decide which three issues have top priority for 2009 and why. After the small group discussions, the three priority key issues identified for each subject area were reported to the large group.

Based on this process, the issues related to women were reduced from eight to three.⁶

Specifically, the issues identified by researchers are:

- Personal safety and harassment
- Poor market facilities/variable gate fees
- Insufficient time for gardening/marketing
- Bags too big and heavy
- Transport, expensive and not reliable
- Prices are not known, low or fluctuating
- No record keeping
- Sweet potato marketing is laborious.

They are reduced to three priority issues:

- Laborious nature of sweet potato marketing
- Training on marketing strategies
- Personal safety and harassment.

Overnight, the research team re-groups the 21 priority issues identified from the seven subject areas into three research themes, marketing efficiency, postharvest management and value addition, based on the project title. Women's issues are incorporated into the "marketing efficiency" theme. The seven priority issues fall under Marketing Efficiency are:

- Lack of credit facilities
- Cost of labour and transport
- Coordination between suppliers and transporters
- Consumer/buyer preferences for sweet potato, including information sharing

⁶ Several issues were added to the butcher paper by workshop participants, including one for training on marketing strategy.

- Laborious nature of sweet potato marketing
- Training on marketing strategies
- Personal safety and harassment

6.2 Day 2

On Day 2, participants were invited to move around the room and examine the three “theme workstations” and decide in which theme they would like to participate. Individuals then assigned themselves to a specific workstation, identified and agreed on three priority issues and provided specific action proposals for each of them. After the small group discussion, each group reported back to the large group on specific action proposals and clarified where necessary.

Workshop participants then offered refinements.

At the end of the workshop, the three priority issues (PIs) and proposed action plans for marketing efficiency theme are:

- PI 1: Lack of credit facilities
- PI 2: Coordination between suppliers and transporters
- PI 3: Consumer/buyer preferences for sweet potato, including information sharing.

It is unfortunate that women’ issues were voted out in this particular prioritising process.

However, they are not forgotten and concerted effort is made to address those issues through other means. For example, in addressing PI 1: Lack of credit facilities, two women’s groups were interviewed, along with another dozen of farmers. In addition, two workshops were held in July 2009 to address PI 3: Understanding consumer and buyer preferences, whereby more than 2/3 of participants were women farmers. In addition, marketing strategies/gross margins and gender training were included in the program to address, respectively, issues of lack of business/marketing skills and gender equality in distribution of income and division of labour within the household.

7 CONCLUSION

The social component of the ACIAR sweet potato marketing project focuses on identifying and addressing marketing issues pertaining to women farmers. Key issues, which were identified from women’s group discussions in September 2008, are: personal safety and harassment; sweet potato marketing is laborious; insufficient time for gardening/marketing; bags too big and heavy; poor market facilities/variable gate fees; transport is expensive and unreliable; prices are not

known, low and fluctuating; no record keeping; and lack of business skills. There are also issues in the distribution of income and division of labour within households -- women have little say on how income is spent within the household even though they have done most of the hard work. Sweet potato production and marketing is laborious and physically demanding, but there is little support from the males. Some of these issues were addressed through further research and training workshops. In particular, workshops were held in July 2009 whereby buyer preferences, marketing strategies, gross margin analysis, and gender training were provided to producers-sellers, of which more than 2/3 of participants were women.

From the women's group discussions, it is clear that women farmers face additional issues compared to their male counterparts when it comes to sweet potato production and marketing. Some of the issues may be beyond the scope of this project. However, opportunities exist to address issues related to personal safety and transport by, for example, opening passport account, forming marketing groups and identifying local buyers. The Continuous Improvement and Innovation Process (Clark, et al. 2008a and 2008b) appears to be complementary to participatory action research and has been applied to research and development project with useful results (e.g., Rola-Rubzen and Gabunada 2003; Madzivhandila et al. 2007). The CI&I approach will be explored for its applicability to solving some of the problems facing women in sweet potato marketing in PNG.

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