

Value Chain Analysis: Small-Scale Tahiti Broom Production in Compostela, Davao De Oro



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ABSTRACT: Tiger grass (*Thysanolaena Taxima*) grows in abundance in the hilly areas of Barangay Mangayon, Compostela, Davao de Oro. One of the strengths of the area is the growing number of Tahiti grass (*Thysanolaena maxima*) and farmers that engaged to Tahiti grass broom production. This study presents the result of the value-chain of Tahiti broom as an approximate way to better understand why the sector thrives and identify the opportunities and blockage of which possible interventions can be made. Soft broom industry has been in the barangay for long years already however, due to the absence of baseline production data and sustained development efforts, Tahiti farmers have not risen their living conditions from the grassroots.

KEYWORDS: Tiger grass (*Thysanolaena Taxima* Kuntze), broom industry, Tahiti farmers, value chain.

1. INTRODUCTION

Tiger grass (*Thysanolaena Taxima* Kuntze syn. *T. latifolia* (Hornem) Honda) locally known as tambo, is a viable source of livelihood for upland communities and can be the main crop or interspersed with fruit trees and other perennial crops (Ella & Domingo, 2010). It grows as high as 2.5 meters (Pinoyentre, 2015). It has been identified as a high-value, non-perishable cash crop, and a multipurpose species which provides brooms and fuel that could make it a potential commodity for agri-business (Fetalvero & Faminial, 2011). *Thysanolaena maxima* can grow in areas with varied environmental conditions such as moist, dry, sloppy, and exposed areas that give it unique adaptability and comparative advantage as an alternative source of livelihood amidst these climatic changes (Bartolome & Banwa, 2013).

As a raw material for soft broom production, it provides potential livelihood to upland farmers due to the increasing demand for tiger grass-made brooms (DOST-PCARRD, 2007). The broom production and marketing have a significant effect on the socio-economic development of the people. It is an important means of livelihood and a coping strategy in response to the crisis and in increasing economic hardship (Shackleton & Campbell, 2007).

In the Philippines, making and selling brooms is one of the main livelihoods of most of families living in rural areas (Alimondo, 2019; Andres, 2014; Bacongco, 2014; Orejas, 2012). The public had initiated a lot of strategies to sustain the industry by providing a better quality of life in the community (Comanda, 2017; Fontanilla, 2015; Balita, 2011; Ella & Domingo, 2010).

In Davao de Oro, Barangay Mangayon has a wide area of arable land and is rich in agricultural produce. One of the strengths of the area is the growing number of Tahiti grass (*Thysanolaena maxima*) and farmers that are engaged to Tahiti grass broom production.

This study presents the result of the value-chain of Tahiti broom as an approximate way to better understand why the sector thrives and identify the opportunities and blockage of which possible interventions can be made. The results of this study shall serve as baseline data of current practices and key players/parties involved in the Tahiti broom industry and for the government institutions and NGOs intervention.

Specifically, this study aimed to achieve the following specific objectives:

1. to review and document the current practices and key players/parties involved in the Tahiti broom industry;
2. to reaffirm and find opportunities and blockages of which possible interventions can be made; and
3. to reaffirm and identify the value-adding process (VAP) of which program intervention can have the most social, economic, and environmental impact.

Conceptual Study Model

The conceptual framework in Figure 1 shows the processes in the value chain of the Tahiti broom industry with its corresponding segments.

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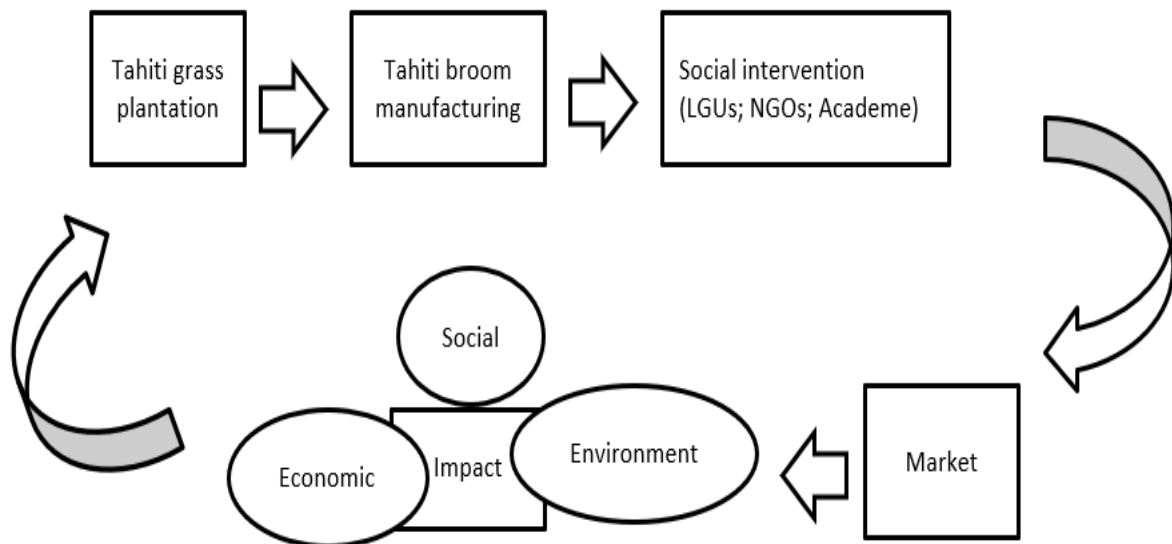


Figure 1. Value Chain of the Tahiti broom industry

2. METHODOLOGY

This study employed qualitative research and used the participatory method in data collection and validation. The method sought to promote participants, not as mere subjects of the study but as active agents of the development process.

The study was conducted in Brgy. Mangayon, Compostela, Davao de Oro. Mangayon has the most households engaged in Tahiti broom industry in the province. It is 5 kms. from the public market of Compostela as shown in Figure 2 (shorturl.at/ftCN5).

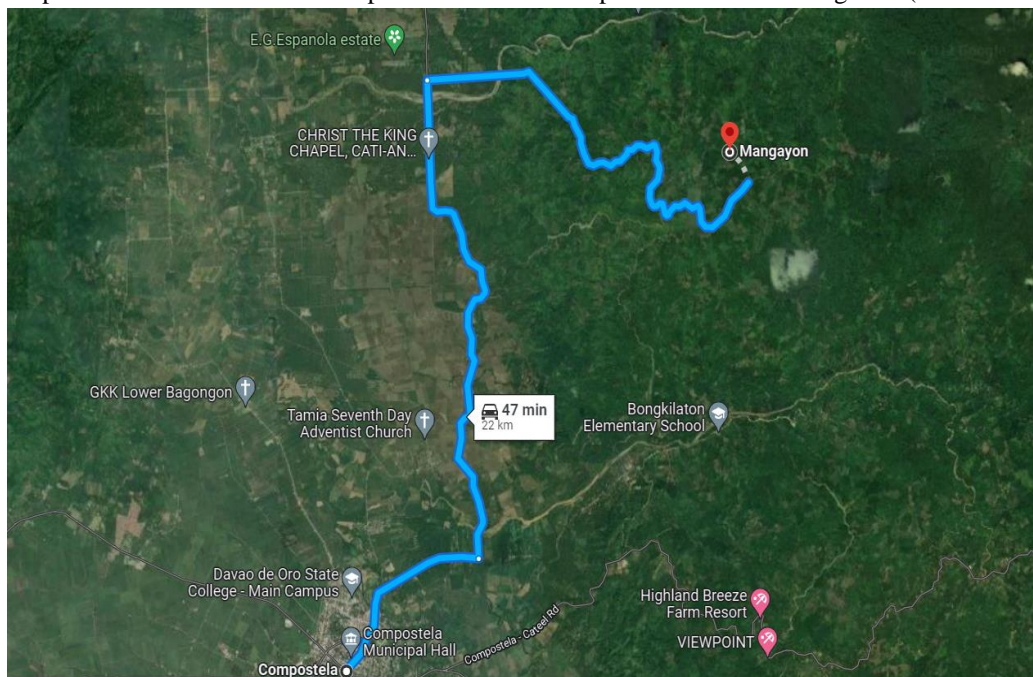


Figure 2. Research Locale

The selection of the key informants was based on certain criteria set by the researchers namely: 1) they should have been engaged in Tahiti broom making and selling for at least one (1) year; and 2) they should be local residents of the Municipality of Compostela. Participants were chosen using purposive sampling. The study population consisted of 20 focus group discussion participants.

The researchers conducted observation, structured interviews, and focus group discussions among the key informants on their experiences in Tahiti broom making and selling.

1. Observation. This involves integrating and witnessing the step-by-step process of Tahiti broom making and selling among respondents.
2. Survey through Structured Interview. This involves the use of an instrument during the conduct of the survey.

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3. Focus Group Discussion. This was conducted to create a platform where the Tahiti broom makers and sellers shared their experiences on the field.

The study focused on the experiences of the Tahiti broom makers and sellers reinforced with the secondary data gathered from various institutions (Municipal Environment and Natural Resources Office (MENRO) and Municipal Planning and Development Office (MPDO) of Compostela; and DTI-Davao de Oro). The actual research in the community, which involved data collection and validation, was carried out from May to July 2019. The data gathering especially the focus group discussion (FGD) was limited only to the Tahiti broom makers and sellers of Brgy. Mangayon, Compostela, Davao de Oro. The strategy of gender mainstreaming was also observed that both men and women were given the equal opportunity to participate in the data gathering.

Ethical Considerations

Aligned to the ethical standards in the conduct of the study, the three fundamental moral standards relevant to the ethics of research involving human subjects: the principles of respect for persons, beneficence, and justice were observed.

The Tahiti broom makers and sellers who were presented as respondents were treated with the highest respect. They were informed that they may withdraw their inclusion with no interest in clarification. If there would be an inconvenience that they may feel they may inform the researchers about their concerns. Their participation and their welfare were taken as the highest priority during the course of the study. In addition, the privacy and confidentiality of the respondents were ensured.

The objectives and significance of the study were explained to the respondents before the data collection through the group discussion and individual interviews were conducted. Responses of the respondents were secured by keeping these in a safe area wherein nobody can attempt to read. Since the sampling was purposive, all Tahiti broom makers and sellers in Barangay Mangayon participated in the interview, however, should they feel discomfort, they withdraw. The researchers ensured that the structured interview guide utilized did not contain any degrading, discriminating, or unacceptable language that could be offensive to any of the respondents.

Meanwhile, respondents were fully informed about the objectives of the study before involving them in the data collection process. They were informed that the possible outcomes may give them an edge as well as the different learners, the school, and the general public by and large. Further, the rights and safety of the respondents of the study were considered.

3. RESULTS AND DISCUSSIONS

Tahiti Broom Production in the Municipality of Compostela: It's History, Nature, and Status

Tahiti broom production has been described as an important means of livelihood and a coping strategy among the community in response to crisis and in increasing economic hardship (Shackleton & Campbell, 2007). It is one of the basic livelihoods of the residents in barangay Mangayon, Compostela, Davao de Oro. Tahiti broom production in Compostela specifically in Barangay Mangayon started by few of the residents in the year 1986.

The profile of the respondents totaled resembles the profile of the Tahiti broom makers and sellers in Compostela. There is an equal participation of men and women in the industry. The industry is composed of mostly elderly men and women. The majority of the Tahiti makers and sellers stepped in elementary and high school. Some of them have lived experiences in broom making and selling from 1 to more than 35 years. Some of them were already involved in the industry even prior to their coming to Compostela.

It was revealed that the Tahiti broom industry in the locality is mostly composed of elderly men and women ranging at the age of 45 and above. It is parallel to the proposition of Bui (2016) that the jobs that favor the older people are tend to call for a fair amount of physical labor and less skill. Hence, the older adults are most likely the natural resources for business industry (Irving, 2018) as a senior entrepreneur for they still have this eagerness to remain productive (Isele & Rogoff, 2014).

Meanwhile, the equal participation of gender in the Tahiti broom industry with 50 percent of the Tahiti makers and sellers are male and 50 percent of are female. The result confirms that Tahiti broom production is not that too labor-intensive in nature that gives a big opportunity to women. It further shows that gender-sensitivity or equality among women and men in the industry has a great potential in the broom industry. In the proposition of Lagarde (2018) that the labor force is the sum of the headcounts of male and female workers such that replacing a man by a woman in does not affect the labor force, hence, there are no gains from gender diversity, men and women are assumed to be perfectly compatible.

On educational attainment, majority of the Tahiti broom makers and sellers are just stepped on elementary and high school. The Tahiti broom production in the barangay is identified with the use of manual labor. This nature of activity accommodates all men and women with a good physical condition and has the willingness to work. Thus, educational attainment is not crucial requirement in this industry.

On the other hand, as to the number of years that Tahiti makers and sellers engage in the industry, there's an equal rate of 40 percent of them who worked for at least one to ten years and eleven to twenty years, while an equal rate of 10 percent were engaged in the

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industry for twenty-one to thirty years and thirty-one years and above. While the result shows that most of the Tahiti makers and sellers are working for less than eleven years, however, there is a considerable number of which who stayed in the industry for most years of their lives.

The Nature and Status of Tahiti Broom Production in the Municipality of Compostela

The Tahiti Grass Plantation Site

The Tahiti grass or *Thysanolaena maxima* can grow in areas with varied environmental conditions such as moist, dry, sloppy and exposed areas that give it unique adaptability (Bartolome & Banwa, 2013). Brgy. Mangayon, Compostela, has a mountainous and sloppy area that is so suitable for Tahiti grass plantation. The figure 3 shows the location of the Tahiti grass plantation and that is located at the coordinates 126° 6'30.58E, 7° 43'24.06"N in barangay Mangayon, Compostela, Davao de Oro.

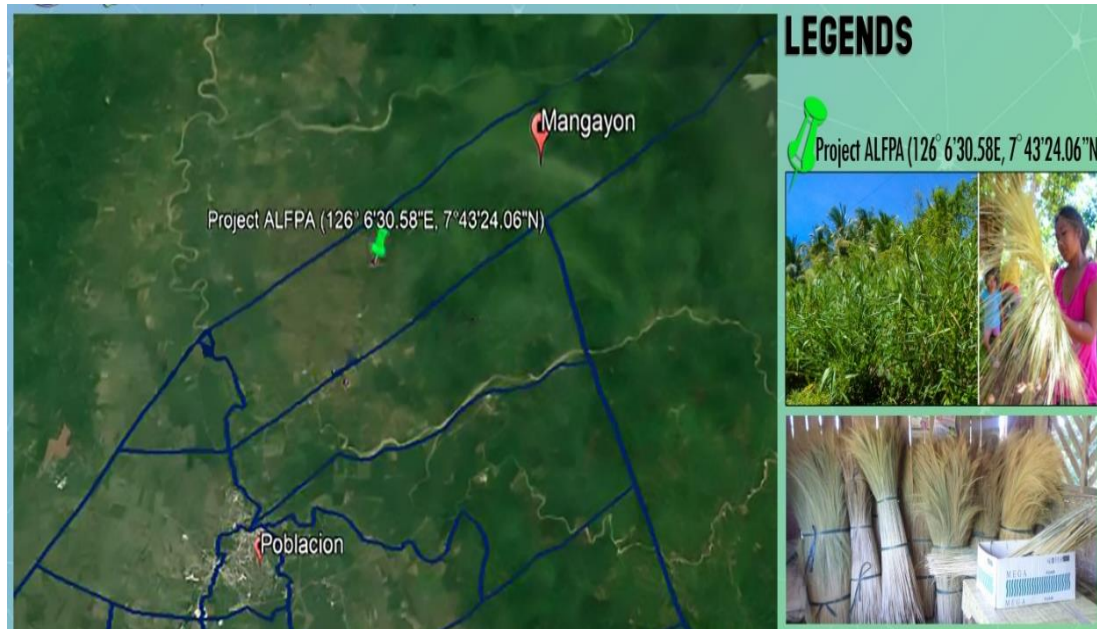


Figure 3. Tahiti Grass Plantation Site (Map)

Most of the Tahiti broom makers and sellers hired a skilled worker to help them in the Tahiti broom production. They hired at least two to ten workers per harvesting season. Their recruitment and hiring process are more on verbal agreements only as long as they are willing to work and has skills in Tahiti grass broom production.

There are no requirements set for a worker to work in the Tahiti broom production. The Tahiti makers and sellers usually hired those they know already like relatives and neighbors. Once hired, the worker directly works from harvesting to Tahiti broom making. The Tahiti broom entrepreneurs see no need for training for the newly hired workers because they are presumed to be experienced in the job.

Due to informal recruitment and hiring practices, the workforce, and the entrepreneur do not bother to formalize their agreements through written documents such as contracts. All contracts are verbal including their mode of payment among workers.

The Tahiti Broom Production

The Tahiti broom production is seasonal, thus when the Tahiti broom makers and seller operate, they maximize their time and production. Ranging from 100-105 panicles of tiger grass is used per broom and maintain some of the stalks to serve as handle with the following materials: plastic string, tire wire or split rattan.

Investments and Market for Tahiti Broom

The financial capital, expenses and profits of the Tahiti broom makers and sellers varied in the land area of their plantation. Table 1 summarizes the financial capital, expenses, and profit among majority of the respondents for their Tahiti broom production business. It further revealed that the Tahiti broom makers and sellers can only have net income of nineteen to twenty thousand annually for one (1) hectare. Brooms are sold in retail P 40.00/pc and wholesale at P 35.00/pc. During lean months, some of them stored panicles or the brooms while waiting for a better market price.

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Table 1. Approximate Income per hectare per season

Land area	Capital	Expenses	Profit
1 ha.	P 5,725.00	Tapas: $P300*3*3=P2,100$; Tahiti: $P4*600=P2,400$; labor: P4,500; Fertilizer: 0 Nylon: $P100*7=P700$; wire: $P75*7=P525$ Total: P 5, 725.00	Gross= $P25,000$; Expenses= $P5725$; Net= $P19,275$

Tahiti Broom Production Process

There are two elements in the value chain for Tahiti broom: The supply and demand chain. However, this study focuses on the supply chain for the Tahiti broom in the Municipality of Compostela. Figure 4 shows the steps in the Tahiti broom production for supply chain.

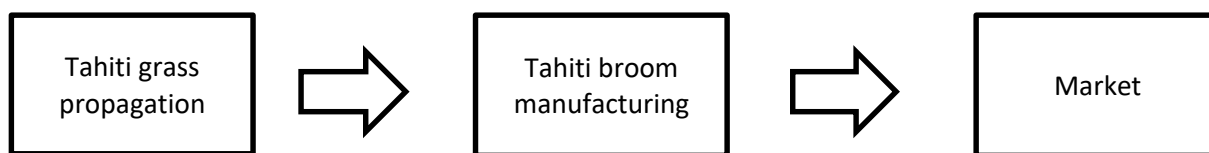


Figure 4. Steps in the Tahiti broom production for supply chain.

Field Design

Most of the farmers intercropped the Tahiti grass with other crops such as coconut, cacao, and other fruit bearing trees. The field area in Barangay Mangayon is sloppy and mountainous which is the preference for the Tahiti grass to grow for this grass flourishes in medium to high elevation, most likely in hillside slopes and logged-over areas (ELLA & DOMINGO, 2010).

Farming Process

There are no amalgamated farming practices of Tahiti grass in the locality from land preparation to harvest. However, they all use the traditional methods through manual labor of land cultivation up to harvesting. Some farmers propagated by seeds and some by root stocks.

Tahiti Broom Process

The Tahiti broom process consists of the following activity:

Drying

Cut the panicles with a sharp scythe or bolo. The harvested Tahiti grass/panicles are sun-dried for 2-3 days and regularly turn the panicles for fast drying.

Deflowering

After the panicles are dried up, it will undergo the process of deflowering where the panicles are slightly shaken or pat against a wood or any flat surface to remove its spikelet (flowers) and seeds.

Handle making

The stalks are tightly bonded together using tie wire to form the handle. Wood or bamboo sticks are usually used as handle alternatives.

Binding

The panicles will be arranged and tightly bind together into fan-like form with plastic string or split rattan.

Packaging

The finished products will be wrapped with presentable packaging made of plastic cellophane.

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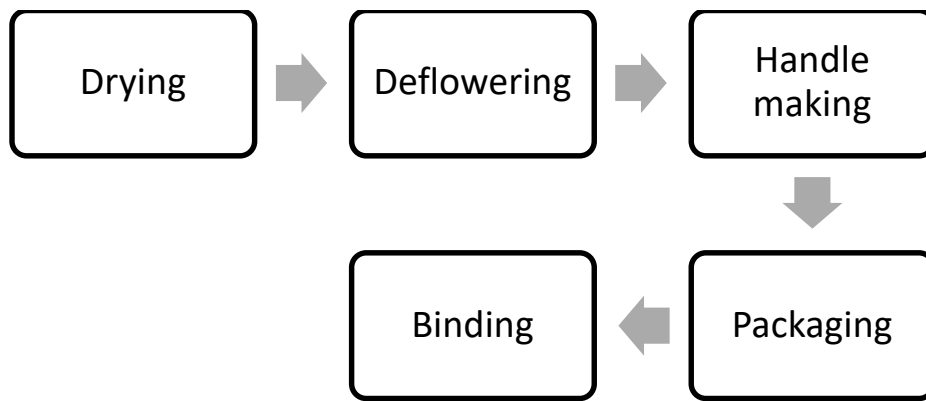


Figure 5. The broom making process

Tahiti Broom Marketing

As revealed, the market strategies of the Tahiti broom makers and sellers in marketing their products, they usually sold their products to wholesalers. They also sold per piece to walk in buyers, display during market days or sometimes through house-to-house selling. They also sometimes experienced difficulties in dispensing their products. Common problems encountered by farmers were the tendered price for their products which cannot suffice sometimes of their need for the resources for cleaning the areas, labor pay, and for fertilizers.

Key Issues

Occupational Hazards and Health Risks

Poor working conditions and lack of safety equipment are the reasons why the farmers exposed to high occupational and health risks.

Based on the findings, the farmers only wear jacket, long pants, and rubber boots in going to the field and most of the farmers are elderly women and men.

Financial Risks and Unsustainable Income

Tahiti broom makers and sellers further manifested the following:

1. *Absence of modern technology*

Tahiti farmers do not have modern equipment or technology that could be used in propagation of Tahiti grass and in manufacturing of soft brooms and improve their primitive farming and traditional marketing practices.

2. *Child Labor and Gender Issues*

There is high participation of women and children in Tahiti broom production. Women are engaged all throughout the process - from Tahiti grass planting to Tahiti broom marketing. On the other hand, children assisted their parents from drying the grass to the delivery of soft brooms in the market stalls or to the buyers.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study the following conclusions and recommendations are drawn:

Conclusions

1. Tahiti broom production gives an equal participation with men and women. Most of them are in their elderly age and majority of them attained low level of education with elementary and high school degrees. Most of them also have engaged in the industry for one to twenty years. These findings implied that the Tahiti production is not that too labor-intensive in nature that gives a big opportunity to the women and elderly age to participate and engaged in.
2. Lack of research and development initiatives especially on Tahiti grass propagation.
3. The problem of transportation was observed. The production area is 20.9 km far from the public market and there was problem with access road (farm to market road). Thus, a better road network needs preferential attention by the government.
4. Soft broom industry has been in the barangay for long years already however, due to the absence of baseline production data and sustained development efforts, Tahiti farmers have not risen their living conditions from the grassroots.

Recommendations

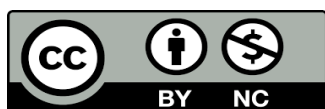
1. Assistance form the LGUs, NGOs, and Academes in promoting the Tahiti broom as a sustainable local product especially on market profitability and sustainability.
2. Further researches relative to Tahiti grass especially on its propagation techniques and biological uses;

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3. On community formation, there is a need to organize the Tahiti farmers where the LGU and the academe (CVSC) can take the lead.
4. Development and transfer of technologies for the propagation of Tahiti grass and manufacturing of Tahiti broom;
5. Capacitate the Tahiti broom entrepreneur in the following:
 - 5.1. Financial management and Marketing;
 - 5.2. Environment Degradation Awareness; and
 - 5.3. Occupational and Health Risks.
6. On gender and development, a program for women tiger grass planters and broom makers can be formulated to empower men and women and uplift their social and economic well-being.

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