Tiger Grass Industry in Marigondon Norte, San Andres, Romblon: Implications for Research and Development[1]

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ABSTRACT

Tiger grass (Thysanolaena maxima) grows in abundance in the mountainous regions of the three adjoining municipalities in Tablasisland in the province of Romblon. The grass has been identified by Indian researchers as a perennial, high value, non-perishable cash crop for wide range of agro-climatic conditions. It is a multipurpose species which provides brooms, fuel, feedstock and has high soil conservation value. Literatures reported that as of 2004, there were about 400 farmers in around 300-hectare tiger grass plantation all over the island. Marigondon Norte in San Andres, Romblon is one of the upland villages known for 'luway' production. The industry has been around for decades but its potential remains unexplored. Records revealed that a number of interventions were made for the industry to gain market but they were short-lived. It was not until the Department of Trade and Industry (DTI) identified tiger grass as a crop for One Town, One Product (OTOP) program of San Andres that efforts were rekindled to help develop the potential of this industry. To establish a comprehensive baseline data upon which developmental efforts are to be anchored, DTI collaborated with Romblon State University (RSU) in conducting a survey among 100 out of the reported 120 tiger grass farmers in the area. Farmers' demographic and socio-economic profiles were determined. Farm-related variables such as farm profiles, farm inputs, farm outputs, farming practices and marketing practices were also described. It was found out that if the farming and marketing practices of the farmers were to be improved, the industry can be a promising economic activity in the village. Findings further support the advocacy that tiger grass could be a potential commodity for agri-business in the uplands. RSU and other agencies can utilize the findings of this study as benchmark in initiating R&D program for tiger grass.

Key words: *Tiger Grass Industry, Luway, Baseline Study on Tiger Grass, Soft brooms*

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BACKGROUND OF THE STUDY

Tiger grass has been identified by Indian researchers as a perennial, high value, non-perishable cash crop for wide range of agro-climatic conditions. It is a multipurpose species which provides brooms, fuel, feed stuff and has high soil conservation value. The decoction of roots of this plant is used as mouth wash during fever. It has the comparative advantage of tolerance to harsh environmental conditions such as steep rocky mountain slopes, shallow soil, drought and high rainfall conditions. Therefore, it is suitable to grow on wastelands as well as in farms. The fibrous root system of the plant is very useful in checking soil erosion on steep slopes. After the harvest, the broom sticks are used as wall building material. The sticks have also been tried by paper and pulp industries for the manufacture of paper. The cultivation of this grass can wean away the practice of shifting cultivation and reduce the dependence of people on forests (Bisht and Ahlawat, 1998).

Marigondon Norte is one of the 13 barangays of San Andres which is a typical remote agricultural village, barely reached by technological breakthroughs because of its rugged trails and far-flung distance (about 14-18km) from the town proper. The residents are dependent on coconut and copra making. The production of copra is quarterly which cannot sustain the daily needs of the people. Rice is grown but very minimal. Tiger grass (luway) farming is one important economic activity in the locality with large areas of land being devoted to tiger grass farming. Tiger grass production comes every first quarter of the year and are sold semi-processed or dried.

A considerable number of farmers are engaged in planting and harvesting this crop and manufacturing brooms out of it. In fact, the crop has been chosen as the municipality's One Town, One Product (OTOP). Literature says that about 1.5 to 3 million pesos worth of tiger grass materials are harvested annually and are sold to nearby municipality of San Agustin where broom making is the major livelihood. It has been also noted that worth of tiger grass could double up to 250 percent if they were processed into brooms. Thus, the activity could be translated into income aside from generating employment and livelihood among farmers' housewives and children.

It was reported in the website of DTI-OTOP section that farmers and processors have already been organized in the municipality. One was the Mari-Norte Development Association which produces around 60,000 to 80,000 straight weave brooms. The other one was the Romblon Malipayon Development Multi-Purpose Cooperative in Marigondon Sur whose capacity

of broom production was 90,000 pieces per year. However, these organizations did not last long.

At present, efforts at rekindling entrepreneurial energies and optimizing the potential of tiger grass are underway with the Department of Trade and Industry (DTI) on the lead. However, data gaps have been observed, thus delaying developmental interventions on tiger grass production. There appears no comprehensive baseline data as to the identity of the farmers, the farm location and plantation areas and availability of resource map locators, among others. It has been observed too, that available figures about the industry in the municipality need to be validated. These concerns imperiled the identification of the appropriate programs geared towards the establishment of a comprehensive and sustainable development plan for the industry.

Recognizing the continuing effort of the government to develop rural-based economic activities and at the same time facilitate the provision of assistance to promising industries, the need to establish database information system as support mechanism for the development of the tiger grass industry in the municipality of San Andres is deemed timely and relevant.

OBJECTIVES

This study was conducted to establish baseline information about the tiger grass industry in Marigondon Norte, San Andres, Romblon during the months of December 2009 and February 2010 as basis for research and development interventions. Specifically the survey sought to:

a. Describe the demographic profiles of the tiger grass farmers in terms of sex, age, civil status and number of dependents;
b. Describe the socio-economic profiles of the tiger grass farmers in terms of highest educational attainment, estimated annual income, sources of income and membership in organization;
c. Determine the profiles of the tiger grass industry in terms of type of industry, years of operation, farm profiles, farm inputs, farm outputs, farming practices and marketing practices; and
d. Identify the problems encountered by the farmers concerning the tiger grass industry.

SIGNIFICANCE OF THE STUDY

The success stories of small and medium enterprises that were able to penetrate the market through the Department of Trade and Industry's One Town, One Product Program (OTOP) inspired other towns with rich resources to do the same. Baseline data from this study are important for government agencies like Department of Science and Technology, Department of Trade and Industry, and Department of Labor and Employment for any possible program or project they could introduce in the area. The local government unit of San Andres particularly the barangay council of Marigondon Norte will also benefit from this study.

Funds are appropriated by the DOST, DTI, DOLE and other government agencies for income-generating projects like tiger grass industry. In order for these funds to be downloaded, project proposals are required. The rich data gathered in this study will help project proponents to plan out better project proposals from tiger grass farming to tiger grass processing. Through the results of this study, decisions as to where the starting point will be in helping the industry can be made better.

The local government of San Andres will be able to update their community resource map through the data from this study. These data could also serve as benchmarks in initiating policies about the industry or in introducing interventions to improve the tiger grass products, the farmers' behavior and their farming and marketing practices.

The Research and Development Unit of the Romblon State University can review the baseline data generated by this study and examine in which aspect it can be of help in developing the tiger grass industry in Marigondon Norte. The unit can take the lead in tiger grass knowledge and technology transfer and techno-demo farms establishment.

SCOPE, DELIMITATION AND LIMITATIONS OF THE STUDY

This study was conducted to establish baseline information about the tiger grass industry in Marigondon Norte, San Andres, Romblon during the months of December 2009 and January 2010. It covered 100 out of the 120 reported tiger grass farmers in the community. The following are the limitations of this survey:

a. This survey could not speak for the general picture of the tiger grass industry in the whole municipality since there were reports that small-scale tiger grass farms are also grown in other villages in the

municipality. Due to limited resources to cover a wider scope, findings are only true among Marigondon Norte tiger grass farmers.

b. Random selection was not possible because the sampling frame provided by the Barangay Council was outdated and incomplete, thus during the actual survey, 20 of the identified farmers were no longer in the community.

c. Some data contained in this study resulted from recall, and in some respondents, were rough estimates only like annual income, income from tiger grass and production volume.

METHODOLOGY

Since the very purpose of the study was to describe the current condition of the tiger grass farmers, the tiger grass industry and the problems they encountered, the research method used was descriptive. Below is the schematic diagram of the design followed in conducting this study.

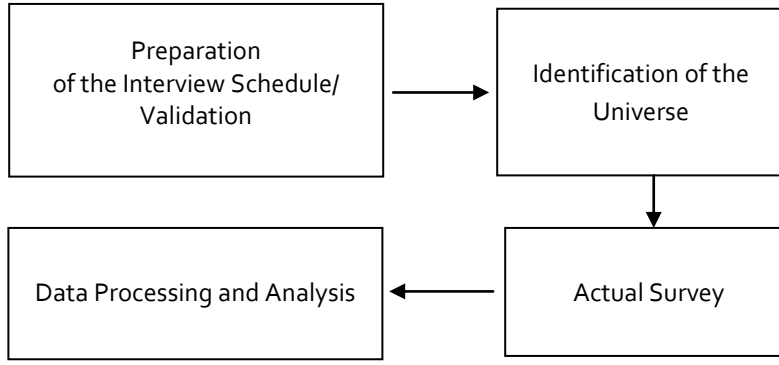

Figure 1. Research Design

Locale and Time of Study

Locale. Marigondon Norte is a tiger grass growing village in San Andres, Romblon. It is located on the north easternmost part of the municipality along with the mountainous region of central Tablas. It has a total land area of approximately 2,800 hectares, a population of about 1,175 (2005), and about 221 households.

Transportation is a major problem in the village because it is about 18km away from the town proper and the roads that cut through the mountains and rivers although passable are really in bad shape and condition. It can be reached by a single motorcycle or a service truck via the Jun Carlo or Mari-Sur routes. Travel time lasts from 45 minutes to one hour. It can also be reached by brisk walk lasting from 2 to 3 hours. Shown in Figure 2 is the spot map of Mari-Norte and its location alongside with other barangays in the municipality of San Andres.

*Time of Study.*This study was conducted from December 2009 to February 2010. The actual survey took place from December 28 to 31, 2009 and January 9 and 10, 2010.

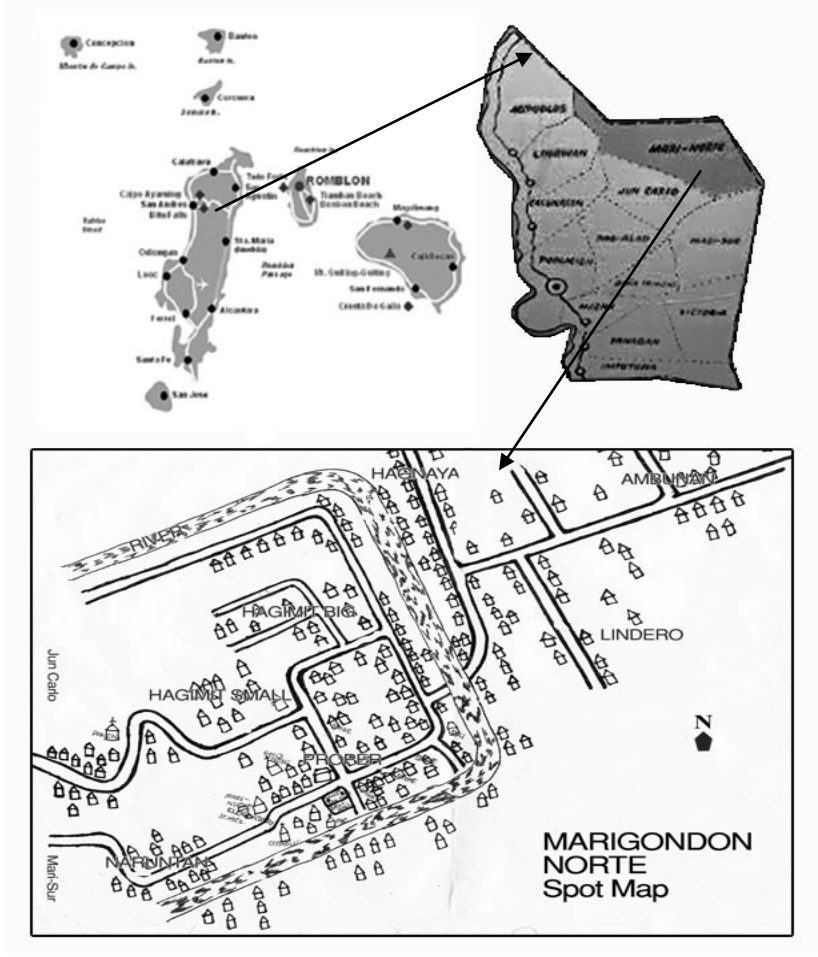

Figure 2. Spot Map of Marigondon Norte

The Respondents

Based on the list provided by the Barangay Council of Mari-Norte, there were 120 tiger grass farmers in the area. But during the actual survey, 20 of those who were enlisted were already out of the locality. The remaining 100 tiger grass farmers in the list were completely enumerated. The table below shows the number of respondents from each *sitio*.

Table 1.Distribution of Respondents Per Sitio

SITIO	FREQUENCY	PERCENT
Lindero	10	10
Proper	19	19
Hagimit Big	24	24
Hagimit Small	5	5
Hagnaya	16	16
Naruntan	22	22
Ambunan	4	4
Total	100	100

The Research Instrument

Nature and Purpose. The data-gathering instrument used in this study was a structured interview schedule. It asked pertinent data about the tiger grass farmer profile, tiger grass industry profile and problems encountered relevant to tiger grass industry. The interview schedule was a combination of closed and open-ended questions. It was worded in Filipino to ensure that the questions were understood by the respondents.

Validation. The interview questionnaire was validated by two employees from the Department of Trade and Industry (DTI) provincial office and an instructor at RSU. Their suggestions were incorporated in the final questionnaire. It was pre-tested among five former tiger grass farmers which were already living in San Andres town proper.

Data Collection and Data Source

The method of data collection employed was a survey particularly the face-to-face structured interview technique. The questionnaire for interview was used in gathering information. Sources of information included the following: the barangay captain provided the list of tiger grass farmers in the locality, the *SangguniangKabataan* Chairman served as a guide in locating the homes of the farmers, and the tiger grass farmers who provided first-hand information about the tiger grass industry.

Method of Data Processing and Analysis

Results of the interview were systematically encoded with the aid of coding manual and coding sheets. These were processed using the program Microsoft Excel. MS Excel data files were converted into an SPSS format (Statistical Packages for Social Sciences). The statistical measures used in analyzing the data were frequency count, range, median (*when there were extreme values*) and mean.

RESULTS AND DISCUSSION

Sex, Civil Status, No. of Dependents, Educational Attainment, Annual Income, Annual Income from Tiger Grass and Affiliation to Social Organizations

Results showed that out of the 100 tiger grass farmers surveyed, 71 were males and 29 were females. Most were married with an average of 4 dependents. The ages of farmers ranged from 22 to 79 years old but most were 42 years old. About 80 percent of them were not able to receive a college education and majority spent few years only in high school. Their approximate annual income varied between P2,500 to P130,000 with an average of P20,500 per farmer. The combined annual income of these farmers was P2,683,000 which was usually sourced from tiger grass farming, copra production, poultry, tiger grass processing and *nito* handicrafts. Most of these farmers were not affiliated with any social organization.

Type of Tiger Grass Industry and Years Engaged in the Industry

There were 86 farmers whose economic activity was concentrated on tiger grass farming alone while 14 doubled to farming and processing. There was some hesitance on the part of most farmers to venture into soft broom making because the process entailed additional labor and they preferred quick cash. The length of their farming experience ranged from 1 to 38 years with an average of 10 ½ years. Most of the broom processors were engaged in the industry for about 20 years already, others for 38 years.

Farm Profiles

Most of the tiger grass farms were owned by farmers but some were tilled by tenants. Essentially, it is very common to see farms that are two kilometers away from the farmers' homes. Although some farms are situated just beside homes, others are located as far as 5 km away. The farm area estimates ranged from 0.3 to 9 hectares with an average of 1 hectare per

farmer. The total farm size was 130.6 hectares distributed in the following locations: Ambunan (39 hectares), Hagnaya (37.8), Naruntan (24.75), Lindero (14.3) Hagimit Big (7.75) and Hagimit Small (7 hectares).

Tiger grass farms were also planted with coconut, other rootcrops and palay while others were solely dedicated to tiger grass plantation. The crop calendar usually begins with site clearing using the slash and burn (kaingin) technique as early as January or February. By May, the land is ready for the sowing of palay seeds. Around June or July, when the palays are already about a foot tall, tiger grasses are planted alongside with the palays. By September or October, palays are harvested but the tiger grasses are left growing. By January to February of the next year, the tiger grasses began producing flowers and by March or April, these are already harvested.

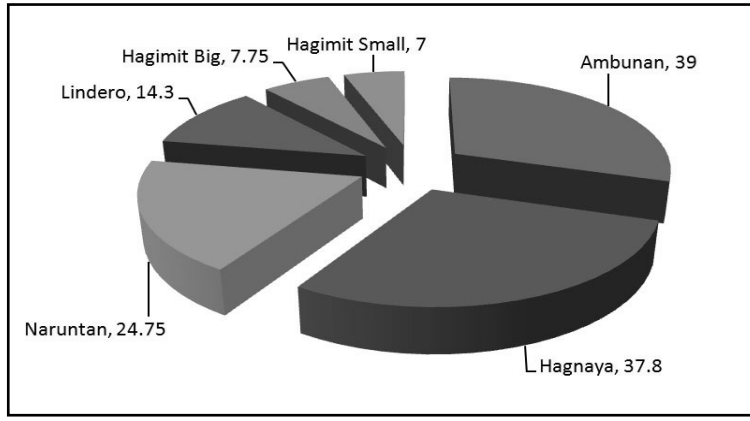

Figure 3.Pie graph for estimated areas of tiger grass farm per sitio (in has.)

Farm Inputs

Managing a tiger grass plantation required an estimated annual expenses of P100 to P15,000 depending on farm size. However, the average expense per farmer was estimated at P2,000 a year. The reported cumulative annual expense including farm inputs and farm help was P284,600. Farm help was usually provided for free by family members, neighbors, nephews, cousins and friends. But some paid about P120 to P150 a day per worker.

Farming Practices

The ideal months for planting tiger grass are from June to July. There is no day or time preference for planting because the crop can be planted any time and any day within those months. Up to this time, no

superstition related to tiger grass planting has already been reported. The different farm implements used in planting were *tara-tara*, a sharp rectangular iron attached to a long wooden handle; *tagad*, a long piece of wood tapered and sharpened in one end; bolo; *pala*; and *piko*.

The most common farming practice was to plant 1 to 5 tiger grass hills (seedlings) per hole with intervals 1 m x 1 m intervals. Others were spacing the crops by 1.5 m x 1.5 m and 3 m x 3 m. With this practice, a hectare of land can be planted with 1,000 to 10,000 hills. Weeding and clearing the underside of the plants were factors affecting flowering performance. These were commonly done once a year by most farmers while others were doing this twice or thrice a year. The following harvest and post-harvest practices were observed: cutting the stalks while the panicles were still green and not yet fully mature, sun drying of panicles for three days; and patting sun dried panicles against rocks to shake off the flowers and pollens.

Farm Outputs

The production volume is measured in terms of bundle, a pack of about 100 stalks of cleaned and sun-dried tiger grass panicles. As of last harvest season, the reported average production volume was 600 bundles per farmer or approximately 80,630 bundles for all farmers. In seasons of low production, volume ranged from 3 to 1,500 bundles with an average of 200 bundles per farmer. In seasons of normal produce, volume ranged from 5 to 3,000 bundles with an average of 400 bundles per farmer. And in seasons of high produce, volume ranged from 30 to 5,000 bundles with an average of 500 bundles per farmer.

Two tiger grass products are produced in the locality: dried luway, the material used in making soft brooms; and the soft broom itself (walistambo). In harvest months, the tendered price for luway ranged from P10 to P35 per bundle. The average price per bundle was P12. During off-peak months, the tendered price increased between P12 to P50 and the average price of each bundle also increased to P20. Price of walistambo also varied between peak and off peak months ranging from P10 to P60.

The estimated annual income earned by a farmer for dried luway production alone was about P9,500. It was found out that an estimated P1,122,500 income could be realized from this industry representing about 50 percent of the farmers' total annual income estimate which was P2,263,000.

Marketing Practices and Buyers of Produce

Farmers commonly sold their produce to luway wholesalers and to luway sales agents. In 2009, the estimated volume of 80,630 bundles were sold to these local agents: Mr. Manasan of Doña Juana (22,200 bundles), Mr. Robert Gabon (20,830 bundles), other agents in Mari-Norte (17,450 bundles), Mr. Gaciles of San Andres (8,650 bundles), agent for Mindoro (4,000 bundles), agent in Mari-Sur (3,600 bundles), agent for Aklan (3,200 bundles) and agent for Odiongan (700 bundles).

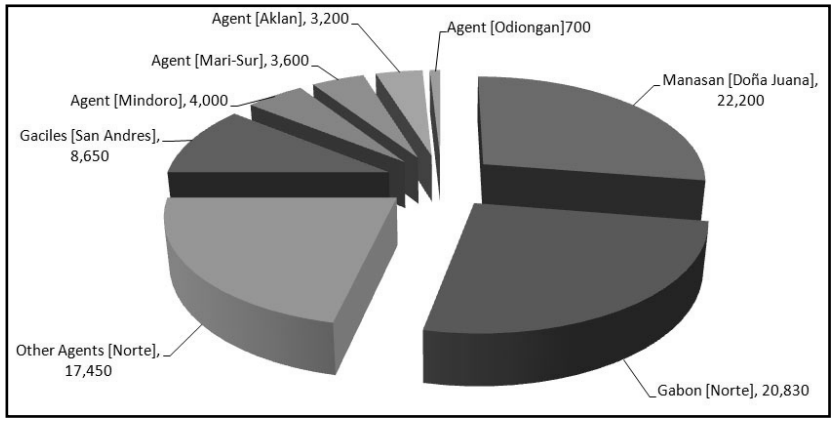

Figure 4. Buyers and Volume of Dried Luway Bought (in bundles)

Problems Encountered by the Industry

Common problems encountered by farmers were lack of financial resource for clearing, labor pay and seedling acquisition; attack of rodents like rats specially when the farms are not cleaned; lack of support from the local government in terms of finding a market; low tendered price for products; poor product quality particularly when it rained during harvest and drying process; and absence of tiger grass processing facilities.

Given proper attention, focus and sustained support, tiger grass production and soft broom processing promise a potential multi-million industry for Barangay Marigondon Norte and for the municipality of San Andres in general. If the industry's 2009 production volume of 80,630 bundles can be maintained or improved, it can generate estimated revenue of P1M to P2M depending on the prevailing market prices. However, if these raw materials were to be processed into soft brooms, an estimated 241,890 brooms can be produced creating an annual revenue ranging from P3.6M to P7.3M. Figures may be higher if their primitive farming and traditional marketing practices could be improved.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. Tiger grass farmers in Marigondon Norte are generally poor, earning only an estimated income of P1,700 a month. This might have been brought about by their low educational attainment and income sources that are limited to seasonal agricultural activities. Evidences are also suggestive of their lack of social empowerment.

2. Tiger grass industry in Marigondon Norte is concentrated more on propagating activities and production of raw materials for soft brooms. Very few ventured in soft broom processing because of the human, technical and financial costs it demands. The industry has been a major economic activity in the locality for long years already but it has not risen from the grassroots because of the absence of baseline production data and of sustained developmental efforts. Aside from these, farmers reported lack of financial sources to defray farm related expenses.

3. More than 130.6 hectares of land in Marigondon Norte are cultivated for tiger grass farming. The industry requires very minimal farm inputs. The average expense for a one-hectare farm was P2,000 usually paid to workers for weeding the farm. Seedlings are collected in the wild while farm implements are just simple farm tools. Once the crops have grown, maintenance is very minimal since farmers have to clear only the farm off weeds at least once a year.

4. The tiger grass industry is a promising economic activity in Marigondon Norte. Around 50 percent of farmer's annual income came from tiger grass production. If its 2009 production volume of 80,630 bundles can be sustained or improved, it can generate an estimated revenue of P1M to P2M depending on prevailing market prices. However, if these were to be processed into soft brooms, an estimated revenue between P3.6M to P7.3M is expected to be realized. Figures may be higher if their primitive farming and traditional marketing practices could be improved.

IMPLICATIONS FOR RESEARCH AND DEVELOPMENT

1. On linkages, the Department of Trade and Industry can help the locals find market for their products through attendance in trade

fairs and other promotional activities. As soon as the local producers feel the demand and profitability of the industry and a market is established, they will not sell anymore their produce to nearby municipalities, they will be encouraged to plant more tiger grasses and process these into soft brooms.

2. On cooperative formation, there is a need to reorganize the tiger grass farmers of Marigondon Norte. The Romblon State University Research and Extension unit in collaboration with the Department of Trade and Industry, Department of Science and Technology, Department of Agriculture and the Local Government Unit of San Andres can the take the lead in this reorganization effort. The ultimate goal is to come up with a cooperative but conducting pre-membership seminars can be done to prepare them for greater responsibilities.

3. On technology transfer, there is also a need to develop the potential for soft broom processing in the locality. DTI and DOST can help introduce mature technologies on tiger grass production such as those invented at Don Mariano Marcos State University which was adopted already by the softbroom processors in San Agustin.

4. On techno-demo farm establishment, the Research Unit of RSU can establish a techno-demo farm in the area and employ the prevailing farming and propagating practices and management of tiger grass plantation. They can make a project proposal to the Land Bank of the Philippines (LBP) to fund the validation of whatever mature tiger grass technologies available under the Marigondon Norte condition.

5. On breaking the monopoly, the University Research, Extension and Production Unit can come up with a Comprehensive plan of breaking the monopoly of purchasing tiger grass products in the area. One suggested strategy is for the Unit to encourage the tiger grass farmers to send their children to RSU much like a study now pay later scheme. An agreement will be forged between RSU and the farmers that upon harvest, they will sell the products to RSU and pay the fees of their children. A warehouse can be put up at RSU San Andres and the production unit can come up with a storage plan so that tiger grass materials could be processed into soft brooms during off-peak seasons, where the value of the product is on its all-time high.

6. On implication in the business curriculum, the College of Business and Accountancy in coordination with DTI, NEDA, DOST and DA can integrate into its BSBA curriculum an "Enterpreneurial Camp." This proposed encampment will be a two-month immersion activity of the business students in a potential community with economic activity to boast like the tiger grass of Mari-Norte. During the encampment, the students will be taught and guided on the preparation of a project proposal and the best proposal could be packaged for possible funding. This activity is expected to broaden the social concept of the students and learn on hand what community development is all about.

7. On gender and development, a program for the women tiger grass farmers can be packaged since this group of farmers manifest sincerity in taking the tiger grass farming and soft broom processing by heart.

8. On further studies, the following may be conducted or initiated by the University REP office :
    a. Profile of tiger grass industries in other barangays like Jun Carlo, Mari-Sur and Victoria;
    b. Case study on the positive contribution of kaingin system on tiger grass farming; and
    c. Tiger grass product development or improvement.

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