

Design of Vetiver Handicraft Products, According to the King's Philosophy, towards Sustainable Development, Case Study: Vetiver Handicraft Products, Ban Pong Samit, Mae Wang District, Chiang Mai Province

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Abstract

This research aimed to 1) study vetiver products in the recent market 2) design and develop vetiver products 3) evaluate opinions on the new designed vetiver products. The representative sample was 100 people from Ban Pong Samit community group. The research persuaded members in the community group to 1. express their opinions for new designed vetiver products 2. join the wickerwork's knowledge development training. 3. be in the process of promoting vetiver cultivation and own vetiver products creation project.

In the beginning, the research found that the community has never used vetivers for weaving or creating products, but had used bamboo stripes for basketry work. Therefore, they were introduced to the training process on how to use vetiver as wicker material. Among the process, the lecturer saw the demands for many kinds of product such as key chains, baskets, doormats, and tissue boxes which were easy to get start. Moreover, according to the community's context, Ban Pong Samit is an agricultural community where cultivates flowers, rice, and strawberries so they chose strawberry as identity of their community's vetiver products. After designing and development, the result shown satisfaction opinions levels as follow: in terms of design, the satisfaction score was 4.51 (a very good level), in terms of the suitability for the area, the satisfaction score was 4.61 (a very good level), and in term of using local material and able to support weight by still conveying the local wisdom, the satisfaction score was 4.56, also in a very good level.

Keywords: Vetiver handicraft products, The king's philosophy

Introduction

The management of natural resource is very important, especially in soil because it relates to human living chains in agriculture, environment, industry, and world natural change context. Phrabat Somdet Phra Paraminthra Maha Bhumibol Adulyadej (Rama IX) had realized these important and had a great vision, so that, from the year of 1991, vetiver was spotlighted with its special feature, having long root, its root expanded deep down and widely under the ground like a net, and it is a natural wall protecting ground from soil erosion. The king Rama IX focused his vetiver research on soil and water conservation, leading to vetiver cultivation for soil protection from erosion. Today, Thailand faced many natural disasters, such as, heavy storm, immerse flood, and soil erosion, so vetiver cultivation will be one of the methods which can alleviate harmful from those natural disasters. (ORDPB, 2011) Land Development Department had collected vetiver species in Thailand and found 28 species; 11 species from *Chrysopogon zizanioides* (L.) Roberty strain and 17 species from *Chrysopogon nemoralis* (Balansa) Holttum strain. Then, the department had selected 10 suitable species; 4 species from *Chrysopogon zizanioides* (L.) Roberty strain and 6 species from *Chrysopogon nemoralis* (Balansa) Holttum strain to use in soil and water conservation purpose. (Land Development Department, 1998)

The activities to promote, extend results and integration plan for vetiver cultivation were cooperated by many networks, such as, Soil Doctor, Vetiver conserve club, and PTT Public Company Limited. They promoted vetiver cultivation in many new emerging areas with the purpose to restore natural resource and environment. Some cultivation activities were used for demonstration, training, and propagation. In addition, vetiver can be used as a toxic filter and used in economics purpose: decreasing fertilizer cost, build a roof, cover ground surface, use in handicraft works, food and animal feeding.

A handicraft that can use vetiver grass as material is wickerwork which is very popular and useful. It can be made as a basket, container, home decoration, accessories, office supplies, bags, hats, belts, pins, folders, and diary cover. For the kind of fragrance vetiver, it can be made as fans, cloth hangers and potpourri. Now, the government run a promotion and support strategies for handicraft production, start with its form, benefit, technique, to product branding for differentiation and values added on world trend and market demand. The main materials would be found in the country or an agricultural waste material. The researcher tried to use material in the local community, and it would be weed or non- economic plants, which the area has a lot in quantity. The products will be produced as souvenirs, utensils, accessories, home decoration to decrease cost and increase value to the vetiver processing. (Jantrasa & Supasetsiri, 2010)

Most people in Ban Pong Samit, Mae Wang district, Chiang Mai province do agriculture (rice, vegetable, and strawberry) for living, while women and elder stay at home as housewife which cause of health problem and no income earning. Some do a weaving and wickerwork but only for in house using purpose. From the observation, there are vetiver cultivation along the forest belt in the research area, but the locals do not have knowledge to produce it as products. So, this research focused on providing knowledge in design and develop vetiver products for community and aims to become a local product with value added by using local material and do a campaign for more vetiver cultivation. The researcher saw an important of vetiver products development for using as home utensil and decoration, because of its beauty with a local unique design, based on local wisdom, which can also make money for the community and raise their economic growth in the future.

Objectives

- 1) To study and design vetiver products in Mae Wang district, Chiang Mai province.
- 2) To evaluate opinions on the new designed of vetiver products in Mae Wang district, Chiang Mai province.

Methodology

Research Method

The research method in designing new vetiver products was shown by the followed chart;

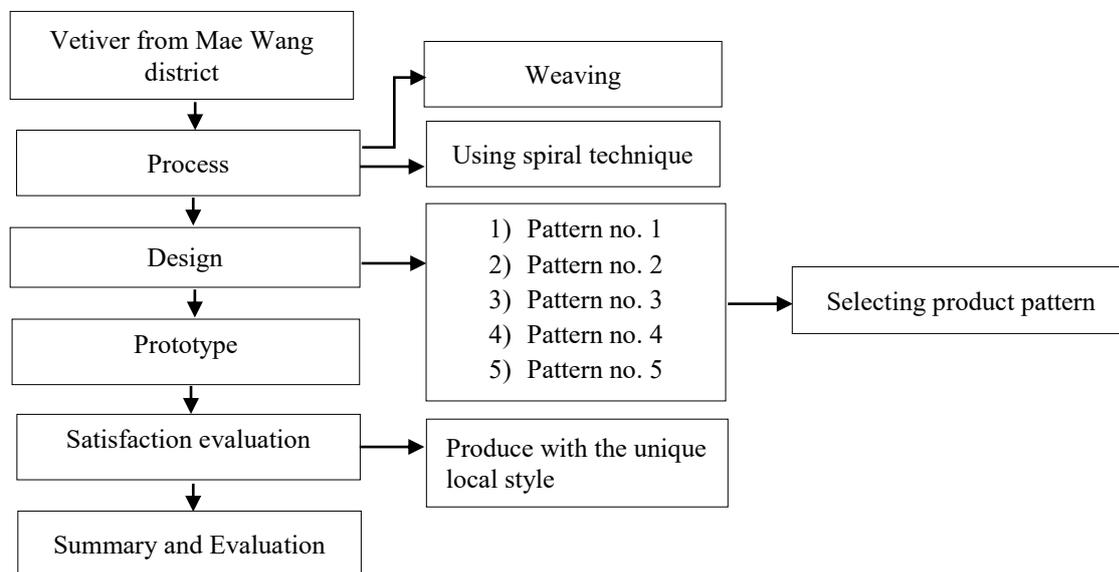


Figure 1 The research method in designing new vetiver products
(Source: Researcher, 2022)

The research steps were;

1. The vetiver study and design in Mae Wang district, Chiang Mai province started with data collecting from the sample group which came from multi-stage random sampling. 100 copies of questionnaire were used for analyzing statistic data, average and Standard deviation.

2. The design and development of new products came from the studied of researcher on the local weaving and using spiral technique patterns with the inspiration to get 5 product sketch designs. The they were presented to the experts before evaluating the satisfaction from customers and selecting one product as a prototype.

3. The opinion evaluation on new vetiver products were done by using questionnaires which were designed in check list and rating scale 5 point forms. The data were collected from 100 people in variety occupations by using multi-stage random sampling. All data were analyzed and presented in form of percentage, average and standard deviation.

Research Area

1. Population and sample group

1. Experts; 3 purposive samples came from group of Designing expert lecturers, designers, and vetiver craftsmen.

2. Sample group; 100 sample came from using multi-stage random sampling with the group of vetiver cultivators agricultural, water and soil preservation in Ban Pong Samit community, Tambobn Mae win of Mae Wang district, Chiang Mai.

2. Variables

Independent variable were age, occupation, and income

Dependent variable were opinions towards vetiver products

3. Research tools

The specifying of purposive sampling came from researcher's determination based on research objectives and doing interview before designing with demand surveying and opinion evaluation on the new design before processing a final product.

Results

1. To study about vetiver products in the recent market, this research found that in Ban Pong Samit community, Mae Wang district, Chiang Mai has vetiver grass, but the locals do not have knowledge in processing vetiver products. Elders grind them for animal feeding purpose, but vetiver is very sticky so that sometime animal cannot eat, and the farmers have finally thrown them away as waste and found it useless. This was a reason why vetiver is not popular for cultivation in the area (interviewed the village headman). In addition, the researcher found that vetiver product which produced in the community in Saluang sub-district of Mae Rim district, Chiang Mai province has a variety of products such as bags, hats, vases, and boxes but they come with 2 patterns: melon seed and rice grain. While in Ban Pong Samit community has never weave or produce products from vetiver, they only have some of vetiver as material, couple with the Researcher realized how important of vetiver is, then this research was begun.

Table 1 Results of product forms analyzation in the recent market

Product forms in the recent market	Analyzation result
	<p>Vetiver were weaved, using folding technique, to become a container for fruits (strawberry, tomato) and flowers, which are usually used in the occasional fairs.</p>
	<p>Vetiver were weaved in form of fruit bowl with normally small size likes a bowl (but can be weaved to ordered size) with melon seed pattern.</p>
	<p>Vetiver were weaved in form of shoulder bags with many sizes, using spiral technique</p>

2. To design and develop vetiver products, from on field study in Ban Pong Samit community, Mae Wang district, Chiang Mai area to gather information about design and development for community's wicker products from 50 group members who are interested in vetiver products (information from village headman in 2020). Because of being an agricultural village: rice, flowers, and strawberry farms, they weave in their free time after agricultural work but most of women do tread weaving while the elders do bamboo stripe weaving to use in house or contain their farm's product to sell in the market

Conceptual frameworks and Creative processes

In 1978, the king Rama IX had commanded to develop occupation for hill tribes in Ban Hae and nearby villages. He had ordered Prince Bhisadej Rajani, president of the Royal Project, to supervised northern office of Agricultural Extension and Development to run the Mae Hae High Land agriculture development Royal Project which had been changed its name to Mae Hae Royal Project Development Center later. Mae Hae Royal Project Development Center located on high land, 1,300 meters from sea level, with 33 square kilometers responsibility area. The design and product development in this research used the form of strawberry from Mae Hae Royal Project as a conceptual framework. The strawberry form had been redesigned to be a symbol and to be unique for the community souvenir.

Table 2 Demand survey from 100 people in vetiver product development

Product	Amount/people	Percentage
No. 1 Basket	20	20.00
No. 2 Fan	14	14.00
No. 3 Doormat	18	18.00
No. 4 Tissue paper box	18	18.00
No. 5 Key chain	33	33.00
No. 6 Lamp	3	3.00
No. 7 Shoulder bag	2	2.00
Total	100	100.00

After getting the idea of strawberry form, researcher and 100 community group members draft the product design with help from vetiver wicker experts in many meetings. In this research, researcher used product development concept of Teerachai Suksod (2001, p.88-94) who said that a good product comes from a design, product design should represent idea by based on design principle. The principle consists of 1. Function and Ergonomics) 2. Safety and Contraction 3. Aesthetics. As well as Nirach Sudsang's theory (2005, p.53) shown that the product development should represent detail in many aspects, and researcher summarized the conceptual framework for is research as follows: 1. Substitution 2. Combination 3. Adaptation 4. Rearranging 5. Reversing 6. Elimination and 7. Putting to another use

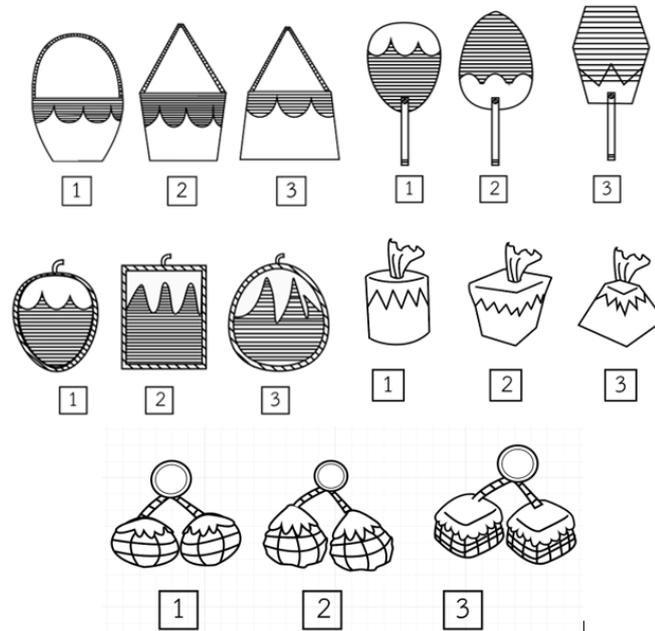


Figure 2 Five sketch ideas (Source: Researcher, 2022)

Result from survey form

Table 3 Opinion towards new design of vetiver products in Mae Wang district, Chiang Mai

Terms of Evaluation	Pattern No.1		Pattern No.2		Pattern No.3		Pattern No.4		Pattern No.5	
	\bar{x}	S.D.								
1. Using suitability	4.47	0.26	4.00	0.00	4.33	0.58	5.00	0.00	4.67	0.58
2. Using convenience	4.67	0.58	5.00	0.00	4.33	0.58	4.33	0.58	4.00	0.00
3. Durable and safety	4.00	0.00	3.67	0.58	4.33	0.58	4.00	1.00	4.33	0.58
4. Material appropriation	4.67	0.58	4.67	0.58	4.67	0.58	4.67	0.58	4.33	0.58
5. Beauty	4.33	0.58	4.00	0.00	3.33	0.58	4.33	0.58	4.00	0.00
รวม	4.47	0.26	4.27	0.32	4.20	0.00	4.47	0.36	4.27	0.32

Opinion on the 1st form, basket, got an average score equal 4.47 with 0.26 of standard deviation that means a very good level in satisfaction.

Opinion on the 2nd form, fan, got an average score equal 4.27 with 0.32 of standard deviation that means a very good level in satisfaction.

Opinion on the 3rd form, doormat, got an average score equal 4.20 with 0.00 of standard deviation that means a very good level in satisfaction.

Opinion on the 4th form, tissue paper box, got an average score equal 4.47 with 0.36 of standard deviation that means a very good level in satisfaction.

Opinion on the 5th form, key chain, got an average score equal 4.27 with 0.32 of standard deviation that means a very good level in satisfaction.

After getting the idea, the member from Ban Pong Samit community, Mae Wang district Chiang Mai community group had been trained on vetiver weaving skill from the experts.



Figure 3 Knowledge and Skill training for Ban Pong Samit community, Tambon Mae Win in Mae Wang district, Chiang Mai community group (Source: Researcher, 2022)



Figure 4 Five Products from this research (Source: Researcher, 2022)

3. To evaluate opinions on the designed and developed vetiver products, after designing and development products, it shown the satisfaction opinions levels as follow: in terms of design, the satisfaction score was 4.51 (a very good level) with standard deviation of 0.05, in terms of the suitability for the area, the satisfaction score was 4.61 (a very good level) with standard deviation of 0.5, and in term of using: weight supporting, using local material and conveying local wisdom, the satisfaction score was 4.56 also in a very good level with standard deviation of 0.54.

Discussions

1. The study about vetiver products in the recent market and community, this research found that in Ban Pong Samit community, Tambon Mae Win in Mae Wang district, Chiang Mai has a lot of vetiver grass, but the locals do not have knowledge in value added processing vetiver products. Most of them grind vetiver grass for animal feeding and fertilizing purpose, but vetiver is very sticky and sometime animal cannot eat it, and finally they had to throw them away as waste and found it useless (interviewed the village headman). In addition, the vetiver products which produced in Saluang sub-district of Mae Rim district, Chiang Mai province, the only area that produce vetiver products in Chiang Mai; from surveying, has a variety of products such as bags, hats, vases, and boxes but they are come with 2 patterns: melon seed and rice grain. While in Ban Pong Samit community has never weave or produce any products from vetiver. The researcher had studied how to creative community's unique by using strawberry form because it is an outstanding community's farm product, this accorded with work of Boonsoong (2017, p.177) which said that a good product should be designed on suitability, new look, and perfectly blended between beauty and usefulness. It was also conformed to work of Leesuwan (1989, p.96) which said that the necessary way to support Thai art and handicraft is to study cultural of the origin and related factors in the area, so, the developers can produce a real suitable and on demand works for the communities (Bonollo & Lewis, 1996).

2. The designed and developed vetiver products from this research, from a field study, found that the elders' group will do bamboo stripe weaving to use in house or contain their farm's product to sell in the market. As an outstanding product, strawberry was used to be a conceptual framework for producing vetiver products in research area. The researcher and 100 community group members draft the product design with help from vetiver wicker experts, and researcher used product development concept of Suksod (2001, p.88-94) who said that a good product comes from a design, product design should represent idea by based on design principle. So that, the researcher used spiral technique for making a strong string and weaved in chicken feather pattern, it harmonized with Jantrasa et al., (2015, p.127) that the size of vetiver string comparing with a thread standard size of 0.73-0.15Ne can be made in a variety size because it will be defined with 3 – 5 vetiver stripes and measure from physical looks. With many weavers, the hand weight to spiral would be different, that why with one thread standard can give a variety size of vetiver string and these caused a different strength of each string. It was also conformed to work of Pantung (2015, p.116) who said that the popular weaving pattern came from weavers mixing style, while the identity patterns are bullet flower, water flow, serge, and crossing. A flower pattern usually uses for weaving fan and using Songka specie which was planted for self-use of the weavers.

3. The opinion evaluation on the designed and developed vetiver products, from the evaluation form, shown that in terms of design, the satisfaction score was 4.51 which is in a very good level, in terms of the suitability for the area, the satisfaction score was 4.61 which is in a very good level and in term of using: weight supporting, using local material, and conveying local wisdom, the satisfaction score was 4.56 which also in a very good level. Because it is a research project that arises from the community's need for joint development. Thus making the community satisfied. Which is consistent with the research of Kittipattanawit (2021) and Kittipattanawit et al. (2021) that has joined with the community to develop packaging and product.

Conclusion and suggestions

The product outcome from this research is suitable to use as a master model in the community because it passed the process of the product design from the experts and consumers' satisfaction. Besides, it can be used as a role model for a further product development project by trying to draw out the local identity and turn it into a unique local vetiver product. The next designing and developing reserch should be on the product pattern which suitable for elders group in order to solve one of the community's problem.

New knowledge and the effects on society and communities

Study the knowledge management style of handicraft wisdom from the Ban Sang community group in weaving patterns. By studying reference documents and fieldwork in the community. It was found that the community group had no knowledge of weaving at all, but had grown vetiver grass to be used as animal feed. The researcher therefore brings the knowledge from the speakers together with the design of souvenir products. To train with the community until you get products that are easy for the community and also provide materials in the community. To create a new wisdom for the Ban Pong Smith community. And can continue to create jobs in the community in the future

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