



Model Development and Value Creation Project for Community Textiles Suphanburi Province (Community Enterprise of Ban Sra Bua Kam Antique Weaving Group)

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Abstract

This research aims to develop new product model as well as add value to mudmee fabric products that meet the needs of the community and the market for a unique identity. This is to be done by passing on the knowledge of natural dyeing and sewing of new product styles to members of the community enterprise – the traditional patterns weaving group of Ban Sa Bua Kam. Natural dyes from local raw materials such as mango leaves, cassia leaves, butterfly pea flowers, and 3 natural mordants: iron rust, ash water (lye) and lime water were used. The result shows that color intensity that is durable to the initial washing can be obtained. Moreover, different types of dye agents create different shade of color. From 12 samples for testing color fastness to wash, most dyed cotton yarns showed 4–5 washing fastness of the AATCC61–2010 standard test, especially those dyed from cassia leaves. The color obtained by dyeing with butterfly pea flowers and mango leaves has 1–2 wash fastness level, i.e. the color will fade or change shade after washing. As for all dyed colors worked through mordant processing, there will be no discoloration on the fabric. The results were used to determine the design of the mudmee fabric structure from the local pattern, “horse stall pattern”. From the original fabric pattern—using the basic knowledge from local wisdom to develop a new modern product pattern, as a result, the community has additional income and has a systematic group management process. This creates driving cooperation in the community to produce commercial products. For the results of the analysis of the relationship of satisfaction in various areas with the trend of purchasing products, it was found that the marketing satisfaction which are product model, price, distribution channel and marketing promotion correlate with the development trend of product identity. From the market test results and satisfaction assessment, it was found that 93.4 percent of the target group of community buyers were mostly between 31–45 years of age. As for the products, it was found that 90.6 percent of consumers were satisfied with work clothes dressing style with the selling price of 1,500–2,000 baht. And 90.6 percent of consumers were satisfied with the technology in distribution (through the website) as well as selling through agents. As for marketing promotion aspect, 94.6 percent of consumers had high satisfaction level of the getting discount and extras.

Keywords: Value Added, Community Textiles, Local Weaving Group, Natural Dyeing

Introduction

Currently Thailand has a policy to drive the country on the basis of Innovation-Driven Enterprise which needs knowledge of science, technology, innovation and creative ideas to enforce the production and service potential in order to create value added to the business enterprise and strengthen the innovation system. This is done by expanding commercial and social results on value added via leveling the production potential of agricultural, industrial and service existing bases to extend the new base as well as developing both local and international innovation. Moreover, there is a possibility to accelerate development on innovation operators via connection among private, governmental, educational, and educational sectors of both central and regional areas to create an innovative system that is strong from the ground up. (National Innovation Agency (Public Organization), n.d.) To adjust the economic structure, the focus has been featured on community enterprise groups which have potential to develop national economy to be strong and competitive. Community enterprise is



one way to raise the level of income, way of life as well as quality of life. To strengthen the community, the focus has been given on self-sufficient community economy. Basic knowledge and local wisdom in developing qualified and standardized products, creation of unique products possibly to expand market channels with creative economy ideas, and using community resources to create value added products or distribution are targets of communities to perform according to their knowledge, resources and supports provided from different sectors.

The Ministry of Science and Technology foresees a way to develop community enterprises operators working on textile and garment industry which could be developed in depth. The project of developing and leveling One Tumbon One Product products using science, technology and innovation, then, works as a project integrating science, technology and innovation together with creative design blending culture, local wisdom to create value added to community weaving products to be products that are in increasing demand of the market. Educating community enterprise to be able to use local resources and be self-sufficient is, then, a mean to help solving poverty of citizen and also a way to build a sustainable economy, society and community.

Suphanburi province is a province which is abundant with natural resources and local wisdom. The province has occupation groups producing local wisdom products for surviving. Most of their products have similar designs and are not vary in patterns. Their products also lack of understanding on popular trend and consumer behavior in the market. The product designs, as a result, do not meet the market needs. There are also a lack of knowledge and skills in developing products and packages and a lack of conducting research and innovating product into markets. These lacks are considered important problems of community enterprise. For this reason, adding value to products using Thai identity or own local wisdom together with using innovation and creative technology to increase value added for community products will be a part helping communities to expand commercial opportunities to be self-sufficient as well as promoting local identity at the same time.

Community Enterprise of Ban Sra Bua Kam Antique Weaving Groups has inherited weaving wisdom from their ancestors descended from Lao Khrang who have their own culture and tradition identity. For this reason, the groups intend to inherit weaving heritage and also want to conserve the wisdom and promote career for community residents. This is done by applying the existing wisdom making community residents realize the wisdom of their own ancestors, thus, continuously carry on weaving traditional patterns. The local woven cloth with traditional patterns has unique patterns which show way of life, belief, and tradition. Woven fabrics have beautiful details, well-chosen color, harmony patterns and are hand-woven taking months to complete. Parts of the materials are from the community, thus, leads to income distribution within the community.

From the discussed problems, the researcher would like to suggest an idea to develop the design and create value added to the community woven products in Suphanburi province (Community Enterprise of Ban Sra Bua Kam Antique Weaving Group). This helps creating value added products which are made from creative ideas suitably with community enterprise and are possible to produce. Currently, the conservation and inheritance of mudmee weaving by the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group is done using synthetic color instead of natural color of traditional wisdom. However, due to environmental awareness and the needs of environmental-friendly products of consumers in the present, the group has an idea to develop natural dye mudmee of traditional wisdom as well as make use of existing local materials to reduce expenses on capital. They also focus on integrating the existing wisdom and the needs to develop new model products with own identity. However, due to the lack of knowledge, skills and experiences on making patterns and sewing, the group, then, miss commercial opportunity. For this reason, this research mainly aims to create an identity of



community weaving products focusing on leveling men and women working garment. This is to be done by adapting the color structure of the local mudmee pattern –the “horse stall pattern”. This will lead to developing new model products with value added corresponded to the market needs and promoting creative idea possibly to apply with local wisdom to increase value for community products which fulfills the consumer needs, strengthens the community to be able to expand commercial value, builds potentiality and sustainability to the local O-top product; and is ready to move on to the world stage.

Research Objectives

1. To study the patterns and designs of community products of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group.
2. To develop new model products and increase value to mudmee products which correspond to the community and market needs to have an outstanding identity.
3. To inherit knowledge of sewing new model products.

Research Conceptual Framework

This research aims to develop new product model by adding value to local weaving products of Suphanburi province (the traditional patterns weaving group of Ban Sa Bua Kam) as follows:

1. to study community product model and the design of the mudmee fabric – the “horse stall pattern” in order to find key features, identity, property and outstanding nature which could be made selling points for community weaving products of the traditional patterns weaving group of Ban Sa Bua Kam.
2. to perform natural color dyeing from the existing local materials.
3. to develop the potential of the products by adapting the color structure of local mudmee pattern– the “horse stall pattern” using the existing local natural color which is environmental friendly so as to increase the value of community products.
4. to make new products by transferring the knowledge on natural color dyeing to the members of target groups under the idea of using knowledge of science, technology, innovation to blend with creative designs of integrating culture with local wisdom.

Methodology

The project of developing and increasing value added to the community weaving products in Suphanburi province (Community Enterprise of Ban Sra Bua Kam Antique Weaving Group) can be divided into 2 parts: Applied Research and Participatory Action Research: PAR which have details as follows:

1. Population and Sample Population

The population of this research are the members of Community Enterprise of Ban Sra Bua Kam Antique Weaving Group, Makamong sub-district, Dan-Chang district, Suphanburi province. The researcher chose sampling population from the community weaving groups using Purposive Sampling which shows only one community enterprise group consisting of 15 members.

2. Research Tool

The researcher used main research tools by means of integrating. The details can be shown as follows:



2.1 Qualitative which includes interviewing according to the interview questions prepared, recording data using voice recorders and photo recorders together with non-interfering observation i.e., the observation is not being realized by the population. This is to study the behavior of the observed population naturally during the knowledge transferring activities.

2.2 Quantitative which includes using questionnaires and assessment on the product satisfaction. The data were made into percentage and could be classified as follows:

2.2.1 Population data consisting of sex, age, status, education and occupation.

2.2.2 Consumer behavior data consisting of product, price, selling distribution, marketing promotion, product use and habitual product choosing.

For assessing the result of transferring knowledge, the researcher used questionnaires tested on working skills before and after carried out the research. Timing and activities were variants consisting of activities on testing skills of creating pattern from weaving, natural color dyeing, and sewing.

3. Constructing and Verifying the Quality of Research Tools

The researcher had research tools verified to gain the reliability of the interviewing form, questionnaires, and satisfactory assessment form by the experts on product designs, price, distribution and marketing promotion. The tools were verified for the quality and later improved before used to test with the 30 sampling target population. After that, the researcher distributed the questionnaires to the target groups of 100 people directly via online. Non-Probability Sampling was carried out to sample the data size based on the statistic for the needs related to the product development.

4. Data Collection

The researcher collected the original product designs of the target group, analyzed the community document, conducted a survey, and interviewed to get data on the needs of consumers to the original community products. The purposive member sampling was done with 15 people.

Studies were done on data of original local madmee pattern design "horse stall pattern" which focused on those of key features, identity, property and outstanding nature which could be made selling points for community weaving products of the traditional patterns weaving group of Ban Sa Bua Kam.

5. Data Analysis

Data were analyzed using descriptive mean i.e. Descriptive Statistics. The collected data were statistically calculated using Frequency and Percentage to work on the questionnaires and interviews. Later the data were verified by experts and made according to the knowledge management process framework consisting of knowledge determination, knowledge creation, knowledge processing, learning exchange, knowledge collection, knowledge transformation and applying knowledge gained to create ways of developing products later on.

6. Conducting Research through Workshop Training Activities and Transferring Knowledge to Level Up Community Weaving Products

Adding value to community weaving products through workshop training and transferring knowledge to develop designs and add value to the target groups were aimed. The researcher focused on developing product designs to level of men and women working garment, with special focus on adapting the color structure of local madmee patterns the "horse stall pattern" which would lead to developing new products as well as raising the value added by using natural color dyeing.



Designing and Creating New Products

The researcher designed and created new products as well as developed product designs of local mudmee products – the “horse stall pattern” by choosing natural color from the existing resources. The result of shading was used to produce community products while the knowledge of natural color dyeing was transferred to the members of the target group. The researcher estimated the designs and created new products using purposive questionnaires from experts, academic people on product design, the president of community enterprise groups, the members of community enterprise groups, and 5 community developers to work on the local mudmee pattern “horse stall pattern” in which originally used synthetic color. Natural color dying from the existing resources was replaced while the target was aimed to develop 4 new clothing product designs including men and women working garment of total 4 pieces with the following steps:

1) Using natural color from the existing resources to work on the local mudmee pattern – the “horse stall pattern” which is the local pattern of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group, Makamong sub-district, Dan-Chang district, Suphanburi province.

2) For the developing process of product designs, natural color obtained from local resourced was used. The researcher used the result from shading test to apply with the products. The product designs which were analyzed and approved by the experts focused on developing new product designs on semi-casual work clothing where the product types were classified as garment product including 4 types of men and women working cloth of 4 pieces.



Figure 1 Designing of Garment Products.

3) The researcher transferred sewing knowledge of new products to the group members to make products emphasizing on making patterns as well as being able to choose material according to the design planned. There were also workshop meetings and operation on making product prototypes. This was to choose purposive members and the community leaders. From the result of group meetings, 10 members were selected.

Conclusion

Main research results could be summarized as follows:

1. Results of the Study on the Original Community Products of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group



Figure 2 Product Designs of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group.

According to the study on the original community products, it was found that most of the product groups made and distributed by the community were those of original local wisdom which had been produced repeatedly for long time. Such product groups were, for example, scarf, sarong, cloth, loincloth and local clothing. Based on the interview to analyze the identity, problems and the way to create designs for developing weaving and community products, it was found that the main problem for developing was the lack of knowledge, skills and experiences on making patterns and sewing. There was also needs of developing new product designs to be different and have an outstanding identity. Currently, the tendency to add value to the products using creative idea of being environmental friendly mingle with the original community wisdom are of demand. Thus, to develop local wisdom products, the researcher introduced the techniques and processes of natural color dyeing from existing local resources so as to adjust the mudmee color structure. This aimed to add value to the products as well as reduce production capital. The introduction of new product designs was done with a variety of making pattern techniques. This was integrated with the research to develop the capacity of community groups together with the sewing weaving cloth which had patterns created by combining local culture and Story Telling to add value to products.

2. Results of the Study Done on Mudmee Local Pattern- the “Horse Stall Pattern”

The group leaders of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group found that the community enterprise groups – Ban Bua Kam women group working on traditional local weaving has inherited weaving wisdom form their ancestors inherited from Lao Khrang people who have own culture and



tradition identity. Their traditional local weaving has patterns of own identity showing way of life, belief, tradition and use fine and beautiful fabric. Color choosing and harmony of hand-woven patterns took months to complete weaving cloth. Part of raw materials were form own communities, thus, caused the income distribution within the community. Making patterns was performed by the elders and later on continued by the members. New patterns were formed to serve the market needs.

The local weaving fabric with traditional patterns of Ban Sa Bua Kam is local wisdom of Bua Kam villagers inherited and been transferred from generation to generation through ancestors around 200 years. Villagers weave cloth to be used on their own, in festivals, merit making ceremonies, and in wedding ceremony as a gift or souvenirs for giving respect for elder relatives of the groom, for example. The women traditional pattern weaving groups of Ban Bua Kam consisted of 40 members. The groups started since 2004. Before this, weaving was done in the old days. The woven cloth is called Lao Krnag Teen Jok pattern and mudmee cloth. Combining the two patterns, Lao Krang woven fabric was formed. From what had been told from the old days, there was a war and Lao people were pushed into Thai not being able to go back to their own country, thus were called Lao Kang. Time passed Lao Kang turned to be Lao Krang. Mudmee Teen Jok of Lao Krang consist of Kab Peak Kai pattern, Kho Ra Kang pattern and a pattern which according to Lao Krang consider to bring good luck to the owners i.e. Kid Mee Rod pattern. It is believed that wearing cloth with this pattern will make wearers save from dangers.

Traditional weaving products of Ban Sra Bua Kam have their own identity of using traditional loom. Their patterns include Makue Pa Pong or Makue Pa Seak, Dok Kaew, Neng, Nok Kra Jab, Peak Bang (Kang Kao), Bug Sang, Pra Ya Nak Pad Mue, Kab Pin, Boa Bue, Klib Lod, Re Kang, for instance.



Figure 3 Mudmee Patterns of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group.

The leader which is new generation heir of community enterprise groups, the local traditional weaving group talked about the local mudmee pattern—the “horse stall pattern” that in the past horses were used as means for travelling and also when staying or spending overnight somewhere. Normally a single piece of wood is used

as a pen. An old lady saw that the travellers always rested their horses at the same place and repeatedly used a piece of wood to make pen. The pen was easily been open or close. The old lady, then, used what she normally saw to create a clothing pattern. The leader also said that the ancient weavers often made Story Telling on the weaving cloth from what they had seen.

3. Research Results Obtained from Workshop Training Activities and Transferring Knowledge to Raising Community Weaving Products

The researcher stated the natural dyeing color shade based on the property test on Color Fastness to Washing. Initially, the assessment was done when obtained the cotton thread from the color shade which had been tested on the color not set on white cloth. The researcher used the result to set mudmee structure designs based on natural color chosen from existing local raw materials which were mango leaves, butterfly pea flowers, and cassia leaves while. For mudmee pattern, the local pattern “horse stall pattern” was used to develop community products and to transfer knowledge on natural color dyeing as follows:

Activity 3.1 Adjusting the structure and color of local mudmee pattern – the “horse stall pattern” by transferring techniques of developing thread dyeing process using natural color.

1. Providing knowledge about cotton thread, cotton preparation before dyeing, basic knowledge about color and mordants.



Figure 4 Providing Knowledge about Cotton Thread.

2. Learning about local plants giving color.

Learning about local plants giving color and collecting local raw materials include the process of dyeing thread using natural color and the material used for dyeing (focusing on local ones) which are mango leaves, butterfly pea flowers and cassia leaves.



Figure 5 Learning about Local Plants Giving Color.

3. Preparation of cotton thread by boiling and method of cleaning thread.



Figure 6 Preparation of Cotton Thread.

Activity 3.2 Training on natural color dyeing and using 3 natural mordants i.e. iron rust, ash water (lye) and lime water.



Figure 7 Training on Natural Color Dyeing and Using Mordants.

According to the results obtained from natural color dyeing test where 12 samples were used to test initial color fastness to wash, it was found that on relation to the color fastness to wash, most of the cotton thread dyed had good level of color fastness to wash especially color dyed from cassia leaves. As for the ones dyed with butterfly pea flowers and mango leaves had low color fastness to wash i.e. the color would fade or there was a change of color shade after washing. When tested all dyed colors worked through mordant processing would not discolorate onto the fabric. The results were used to determine the color structure design of “horse stall pattern” mudmee and developed to be used with community products by transferring natural color dyeing to the members of target groups.

Results of Developing “Horse Stall Pattern” Mudmee by Natural Color Dyeing

Designing and developing added value to the products. This was done by developing innovation onto “horse stall pattern” mudmee i.e. using natural color gained from mango leaves, butterfly pea flowers and cassia leaves. It also included the weaving process using additional color painting technique locally known as “Jae”. “Jae” is the process of dipping a stick in color and painting it on the threads. This technique is considered to be an outstanding identity of Lao Krang people. The production processes for commercial were transferred to the group members as follows:



Figure 8 Color Painting or Mudmee “Jae”.



Figure 9 Weaving “House Stall Pattern” Mudmee.



Figure 10 Product from Mudmee Local/Provincial Patterns the “Horse Stall Pattern” from Natural Color Dyeing.

Result of Choosing Designs for Developing Products

The researcher set the innovation of mudmee sarong pattern– the “horse stall pattern” and chose the color structure using the result of color shade test on natural color dyeing from mango leaves, butterfly pea flowers and cassia leaves. Results were used to develop community products focusing on developing new product designs and increasing value added. Members of the target groups were purposively chosen starting from the president of community enterprise group and other 15 group members were experts to choose and set 10 designs of prototype products. The result obtained was garment product including 4 types of men and women working cloth of 4 pieces.



Figure 11 Developing Model for Garment Products.

Activity 3.3 Transferring sewing knowledge on new product design to group members so as to perform commercially production was done by organizing training on making patterns, sewing as well as choosing material according to the design planned.



Figure 12 Transferring Sewing Knowledge on New Product Design.

For the aspect of transferring knowledge to the community, the researcher found that the community groups had better ability to develop their product groups. This was considered using testing criteria of before and after operation as well as the potential to bring techniques gained from the research to apply with the production aspect of the 3 activities which were testing on pattern creating skill from weaving, testing on color dyeing and sewing skills. The results from the operation showed that the community groups were able to develop their former skills higher than 70 percent according to all activities assessment forms.

Prototype Product of “Horse Stall Pattern” Mudmee

The researcher set the natural color dyeing shade based on the shading test. The results were used to develop and add value to community products. The assessment of designing and creating new products was done by purposive interview from experts, academic in designing products, the president of community enterprise, members of community enterprise groups, and 5 community developers. The local mudmee – the “horse stall

pattern” was dyed with natural color and developed into 4 types of men and women working garment totally 4 pieces. The knowledge transferring on sewing the new product design was given to the group members so that they could commercially produce the products for the Community Enterprise of Ban Sra Bua Kam Antique Weaving Groups, Makamong sub-district, Dan-Chang district, Suphanburi province.



Figure 13 Prototype of Mudmee “Horse Stall Pattern” Product.

Figure 13 shows the prototypes of mudmee “horse stall pattern” product design which obtained creative products to add value for the products of Community Enterprise of Ban Sra Bua Kam Antique Weaving Group, Suphanburi province. Local natural color dyeing was adapted with the local mudmee pattern – “horse stall pattern” on color structure. Developing local weaving products which came from contributory to expand wisdom knowledge from the ancestors led to learning i.e. community enterprise operators gain knowledge and experiences in relation to developing products by means of value added, designing, consideration on the differences of new and old products, developing products that were new and differed from existing ones in the market as well as ones corresponded to the needs of communities and market. This created an opportunity for the community to access knowledge and form new creative ideas. The products were in actual distributed to the market at various places including OTOP fairs and yearly provincial fairs in order to estimate consumers of high interested in the products. As has been mentioned, these brought an increasing of income to the community groups and at the same time helped conserving valuable wisdom to be with the community forever.

Discussion

According to the results of the study on the needs of developing product model to add value to local weaving products of Suphanburi province (the traditional patterns weaving group of Ban Sa Bua Kam), the researcher worked on developing product design and raised the level of clothing products as well as men and women working garment. The focus was on the local pattern –the “horse stall pattern” and adjusting color structure of weaving products. This aimed for developing new products of higher value added as well as developing dyeing process of weaving products. The target objectives were to set mudmee color structure designs and use natural color from the existing local raw materials i.e. mango leaves, butterfly pea flowers and cassia leaves. Knowledge of natural color dyeing was transferred to the community trough studies and testing which later brought into practice on developing prototype products of the Community Enterprise of Ban Sra Bua Kam Antique Weaving Group. Designing and developing value added to the products as well as developing an innovation on mudmee sarong pattern –the “horse stall pattern” were carried out. Moreover, development on modern design products so as to respond to the practical use and beauty was also the target of creating products. Technology on natural color dying processes and sewing new products knowledge were given through workshop trainings to the target



groups in relation to dyeing “horse stall pattern” with existing local natural color. This was expected to create standard and make the products environmental friendly. Focus was on garment products, that of men and women working age. The target was 4 designs of 4 pieces.

Results of satisfaction on products of the developing project and raising OTOP products with science, technology and innovation in Suphanburi province, the traditional patterns weaving group of Ban Sa Bua Kam

Satisfaction level from questionnaires obtained from 50 responders on the market test process of the product could be classified into 4 aspects as follows:

1. Production Aspect: Satisfaction level on the product quality is at 85.4 percent. That of shelf life is 80 percent, while 82.6 percent is that of satisfaction on pattern designs. Satisfaction in beautiful packaging equals to 93.4 percent; on product logo 88 percent; on unique identity of products 92 percent; on product standard certification mark 81.4 percent; and on modern pattern designs 85.40 percent.

2. Pricing Aspect: Satisfaction level on the suitable selling price and product types is 89.4 percent. That of showing selling price clearly is 90.6 percent; bargaining prices 85.4 percent; suitability of product value and price 86.6 percent; and variety of prices 86.6 percent.

3. Distribution Aspect: Satisfaction level on selling at the production places equals to 86.6 percent; normal selling in market 85.4 percent; selling places with attractive atmosphere 84 percent; distribution using technology (through website) 90.6 percent; ease of shopping at selling places 86.6 percent; and selling through representatives 90.6 percent.

4. Marketing Promotion Aspect: Satisfaction level on discount with free gifts is 94.6 percent; advertising and public relation through different medias 90.6 percent; service provided by staff 92 percent; and providing sample products for testing 92 percent.

Based on the whole discussion, it shows that developing products, model and creating value added to the community weaving products in the area of Suphanburi province by blending local resources, local identity, local wisdom and local innovation can create new products. Dyeing mudmee with natural colors which is original wisdom knowledge focusing on choosing the existing resources helps reducing production cost as well as expenses on buying raw materials. This creates a variety of product model corresponding to the market needs and also expand choices for consumers in buying natural dye and environmental friendly mudmee, as a result, increase value to the product. This suits the objective of the targeted model.

Research Recommendation

1. The community product groups studied were limited to those in Suphanburi province (Community Enterprise of Ban Sra Bua Kam Antique Weaving Group). It is possible, then, for further studies to expand the results gained to other community product groups to encourage the community to be able to produce commercial products, expand knowledge, create quality work value and response the market needs and as a result increase the community income in the future.

2. This research focused on increasing value of local products with the focus on production. It did not include the research on increasing the level of products for the market of ready-made fashion product groups and other types of markets. For further studies, this research would, then, works well as important data base to be used for developing the unique of community brand making the community to become a model weaving



community with systematic product management and logistic of modern market places. As a consequence, this will promote channels for expanding business of local wisdom groups in the future.

Expectation

1. Develop new model and add value to mudmee products meeting the needs of communities and market to be unique in order to expand the wisdom to form creative economy and be environmental friendly which will lead to success and worthiness of the project.
2. The target groups gain knowledge of sewing new model products through practical training.

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References

National Innovation Agency (Public Organization). (n.d.). *4 Strategies to Drive 'Thailand': Toward Innovation Nation*. Retrieved from <https://www.nia.or.th/NIA4>