

Natural Dyes on Indonesian Traditional Textiles - A Case Study: Geringsing Woven Fabric, In Tenganan Pegeringsingan Village Bali -

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Abstract

Indonesia has a wealth of traditional textiles that are spread in every corner of its region, each of them has its own characteristics and uniqueness. Among the diversity of decorative and techniques used, there are also peculiarities arising from the coloring techniques, that is staining with natural dyes. The existence and the authenticity of the coloring techniques are still retained in some places in Indonesia until today. Generally, these societies make the fabric-making process as part of the ritual beliefs. One of which are the societies in Tenganan, Bali, an area in Bali which always use fabric as an important part in every traditional ceremony. The fabrics is known by the name Geringsing. The typically color which shown and also the sacred values that accompany make Geringsing a very special woven fabric and cannot be found in other areas. This is one of the local geniuses that need to be preserved. In addition to its unique techniques and special materials, Geringsing woven also keeps its myth and its philosophy. The emersion of Geringsing woven closely related to the community trust in God Indra as the main protector deity. The necessary initial process of making Geringsing is holding special ceremony attended by various circles of Tenganan village society. People in Tenganan believe that Geringsing is a precious heritage avoiding all diseases and disorders of evil spirits.

Keywords: natural dyes, traditional textiles, heritage, geringsing fabrics, local genius

I . Introduction

Indonesia as an archipelagic country has an advantage in terms of diversity of cultures and traditions. One of which is the diversity in textiles, that is woven fabric. Woven fabric that is almost spread in all over the nation is an inheritance from the ancestors of Indonesia. Its complicated manufacturing process, using natural raw materials, as well as the content of philosophical meaning in

its decorative patterns make the woven fabric has a high cultural value. One of the features of Indonesian traditional fabrics is the use of natural dyes, which are still found today. Traditionally the use of natural dyes is not merely act as a fabric dye, but also contained the philosophy background and meaning behind it. This is one of the local geniuses that need to be preserved.

II . Natural Dyes and Textiles in Indonesia

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Natural dyes for textiles have been used in Indonesia for quite a long time. These dyes are produced from wood or barks, leaves or roots of plants or trees from throughout the archipelago. Thus, from region to region, the colors obtained from these dyes are quite similar.

In the past, natural fibers and dyes were traditionally used as textile materials, which usage was emphasized on the fulfillment of spiritual purposes and the production of sacred traditional fabrics. It is unsurprising that the production process was usually time-consuming and highly complicated.

1. Textiles using natural dyes in Indonesia

In the book entitled *Tenunan Indonesia* (1995) since the invention of aniline synthetic dyes at the end of the 19th century by German scientist, the role of natural dyes has been fading. Only those who appreciate the value of traditional textiles and their accompanying cultural contents could comprehend the uniqueness of natural dyes. They are usually historians, cultural elites, collectors, and artists.

The appreciation of natural fibers and dyes leads to the formation of communities of natural dye textile enthusiasts. These communities usually emphasize on prestige and concerns toward issues of environment, environment-friendly concepts, back-to-nature lifestyles, as well as the appreciation of the values of national culture.

In the modern era, certain producers begin to find ways to produce textiles using natural dyes based on traditional process, but with a higher efficiency rate, by replacing, for instance, other traditional ingredients with newer materials, to ensure faster and more complete color absorption. The recent usage of natural dyes in Indonesia is emphasized more on the consumers' need to find alternative products containing local values. Those products also contain historic and nostalgic values, and are, therefore, more 'human,' as well as con-

sidered more environmentally friendly. The more complicated production process compared to that of the synthetic dyes, results in higher prices and exclusivity. For this reason, textiles made of natural fibers and dyes belong to a different class, not equal to those produced using synthetic dyes, although each has its own special role. Synthetic dyes were invented due to high consumer demands which cannot be quantitatively fulfilled by natural dyes.

Indonesian traditional textiles related to the customs of their origins. These textiles exclusively use natural fibers and dyes and they usually possess these aspects:

- They are made to fulfill ritual or religious purposes of certain traditional beliefs (the production process is part of the ritual)
- They contain certain philosophies, depending on their origins.
- Their production process involves proficient skills and is usually time-consuming.
- Visually, they are swarmed with ornaments, rich in colors, complicated, and detailed.
- Their ornaments possess symbolic values
- They are used for certain traditional rituals.

The things mentioned above are found in the traditional fabrics in Indonesia which use natural dyes, one of which is Geringsing custom fabrics from Tenganan village, Karangasem, Bali.

2. Geringsing woven fabric

For the villagers, Geringsing woven fabric is a sacred cloth, containing a deep philosophy and myth that is very valuable. In the making process, it is required to undergo some sacred ritual procession and take a long time. Therefore Geringsing woven fabric has a high cultural value, especially for Tenganan villagers and generally for Indonesian society.

The high value of Geringsing woven local culture is due to its uniqueness. The uniqueness of Geringsing woven lies in the elements that built it,

namely the manufacturing techniques - which include dyeing with natural dyes and weaving procedures - and the variety of decorations. Weaving techniques used in the process of weaving Geringsing is a rare technique that is used only in three countries, Japan, India and Indonesia (in the village of Tenganan Pegeringsingan, Bali). The weaving technique is double ikat technique or commonly referred to as double binding weaving. Double ikat technique is a textile raft making technique which has a very high level of complexity, impact on several other factors, such as the difficulty of regeneration, a time-consuming making process until the quite high price. But this does not reduce the value of the nobleness of Geringsing woven.

Another uniqueness of Geringsing woven lies in the rich diversity of decorative patterns. Decorative patterns of Geringsing woven have a deep philosophical meaning; each entity of decorative patterns contains of certain meaning and significance.

The creation of Geringsing woven decorative patterns are influenced by several factors, among others: the influence of immigrant cultures that entered Bali through sea entrance. The most influential immigrants on the Balinese culture were the merchant who came from Gujarat, India. Another factor is the belief of the villagers to the myth of god Indra as the highest god in the Tenganan village, from that myth arose a story about the origin of the decorative patterns of Geringsing woven that is believed by the villagers. Geringsing woven not only unique because of its decorative patterns, but also by its colors. The colors are created because of the influence of nature and the environment around Tenganan village and as well as the decorative patterns, the colors of Geringsing woven are also believed to appear due to the influence of traditional myths.

1) The making process of Geringsing woven
Geringsing fabrics or also called *Wastra Geringsing*



<Fig. 1> Cotton crops that are widely grown in Bali and become the main materials of Geringsing woven. (Source: *Thread of life*, 2009)

is made from cotton yarn (Figure 1). Cotton is processed before being used in advance, through the process of cotton spinning and warping.

Geringsing fabrics with *double ikat* weaving technique is only exist in a village in Bali. *Double ikat* weaving technique is a technique of weaving with an excess on the processing techniques of the yarn material that will be used. The yarn is dyed before it is woven (coloring process), it is unique since there are not only one kind of yarn that is dyed and shaped into motif (Just warp yarns or weft threads, like binding weaving process). Both warp and weft) are dyed with natural dyes, by firstly passing the tying process according to the motif that will be made. So that the decoration or motif that is formed will not be visible until the yarn is woven on a loom, the decorative patterns will be visible after the unification of these two threads (Gillow et al., 1999). Another uniqueness of this woven fabric is that it can be viewed from two directions; front and rear sides have similar results, different from other weaving techniques, in which the frontside will looks different to the back side. This makes double ikat woven fabric special because it can be used by both sides.

2) The colors on Geringsing fabrics

The colors that appear are red color of dark

soil and black and the parts that are not affected by the two colors are colored like the egg shells. In making a piece of cloth Geringsing require a long time, sometimes it takes five to eight years. The dyeing work begins with tying the parts of weft and warp yarns in order to avoid it from color during the immersion. The yarns are then sent to Bug-bug village to be dyed with indigo color/indigofera because the people of Tenganan Pageringsingan village are prohibited to dye the indigo color. After the dyeing of blue color, the bonds that will be dyed with red color are opened, and red color dyeing is started, which is derived from the noni tree roots from Nusa Penida.

The immersion of red color is done many times until the desired dark red color is obtained. When the yarns are ready, the weaving stages are begun.

There are three primary colors used for weaving Geringsing woven that is called as the term *Tridatu*, which is the sacred color for the village. The colors are red, black and orange (eggshell). These colors appear due to the coloring process by using some natural material:

- The red color is obtained from the dyeing process on the yarn with natural dyes extracted from the 'babakan' (tree petals) of white Kepudung with the roots of Sunti tree (*Morinda citrifolia* sp.)
- Black color (blue black/blue violet) is obtained from dyeing the yarn with natural dyes extracted from the Taum/Tarum tree/indigofera (*Indigofera tinctoria*).
- The eggshell color is obtained from the process of dyeing the yarn with natural dye extracts of hazelnut (*Aleurites moluccana*) (Ramseyer, 2009). Hazelnut that is used specifically only fruit that is really old and falling naturally from the tree.

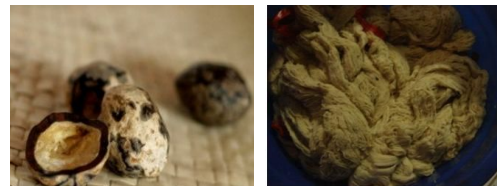
These colors are materials that are available naturally in the village environment, so that the citizens of our ancestors can already use it to make the Geringsing weaving procession.



<Fig. 2> Dyes retrieval process from the root bark of Noni tree (*Morinda citrifolia* sp). (Documentation: Widiawati, 2010)



<Fig. 3> The dyeing results with natural dyes of Noni roots (*Morinda citrifolia* sp). (Documentation: Widiawati, 2010)



<Fig. 4> The old hazelnut is used to produce a yellowish white color. (Documentation: Widiawati, 2010)



<Fig. 5> The process of making natural dyes from *Indigofera tinctoria* plants. (Documentation: Amanah, 2009)



<Fig. 6> One of geringsing fabric which uses indigo and hazelnut natural dyes. (Documentation: Widiawati, 2010)

3) Colors based on Tri Kono concept

For the residents of Bali in general, color is a physical and spiritual expression that is reflected in various kinds of traditional artworks (Damaprawira, 2002). In Bali there is a concept of color that often appears in various kinds of cultural products in Bali, including in the Tenganan village. This concept produces the three basic colors that come from *getih*, *areng*, *pamor* (blood, charcoal and chalk) which visualize the red, black and white colors, red as a symbol of birth, black as a symbol of life and white as a symbol of death. These colors have become the basis of consideration of the Balinese to make various kinds of ceremony equipment such as *tridatu* color at *tridatu* yarn (red, black and white yarn that used together) and *pengurip* that is used on the building.

Because the color consists of three colors then the colors are known by the name of *tridatu* which means the three forces. This word comes from the *Kawi* language (*Jawa Kuna*/ Old Javenese): *Tri* = three, *datu* = queen = *sakti* = power. The character of this color is religious because it has depth meaning and as a symbol of its designation.

Red, black and white color is then equated also with red, black and yellow. White is replaced by yellow. Yellow is the color that is used as a symbol to make sense of the term *tenget*, while white only giving sacred meaning. Then the red, black and white on the concept of Tri Murthi symbolizes Brahma, Vishnu and Shiva, which has the same meaning and symbol of the birth, life and death.

Especially for the Tenganan area, although the community also holds *tridatu* color concepts, but the belief in the god they worship is not the same



<Fig. 7> The color based on the concept of *Tri Kono*. (Source: Remawa, 2009)

as in other areas of the Balinese people who hold the concept of *Tri Murthi* symbolizes Brahma, Vishnu and Shiva. While Tenganan people worship the god Indera. Because of it, the colors that appear on the Geringsing fabric always three colors mentioned above.

The meaning of color in the Geringsing woven fabric based on the villagers' trust are:

- Orange yellowish / eggshell color, a symbol of life in the sky (*upper world*),
- Black (blue-black) as a symbol of the under-world.
- Red (red) as a symbol of the middle world inhabited by humans.

These three primary colors are never separated from the various activities in Pegeringsingan Tenganan village; it is used and believed to live a peaceful and serene life. So the color of Geringsing woven does not change from generation to generation, no modifications or creations of the craftsmen, because they do not want to violate what has been determined by previous ancestors. This makes the purity and authenticity of Geringsing woven always survive since long time ago.

4) Variety of decorative patterns on Geringsing woven

There are more than 20 varieties of decorative patterns on Geringsing woven produced by native Geringsing weavers, but there are currently 14 varieties still exist today. Some varieties of Geringsing woven decorative patterns that have survived include:

The motif is called *Lubeng*. The signature of



<Fig. 8> *Geringsing lubeng*. (Source: Hauser, 1991)

this variety is the presence of scorpion images. The longest size of *Lubeng Luhur* equals the size of three scorpion-shaped flowers. In the mean time, there is only one full scorpion-shaped flower in *Lubeng Petang Dasa* which is placed in the center right between a half size of scorpion-shaped flower in each side. The shortest one is called *Lubeng Pat Likur*. It is usually used in certain cultural or religious ceremonies, and worn as traditional clothes.

This one is called *Geringsing Cemplong* motif because there are a number of big flowers among the smaller ones which create an illusion that there are gaps or holes among those flowers which make them look *cemplong*. The types of *Geringsing Cemplong* are: *Pat Likur* sized (24 threads), *senteng/anteng* (waist band for female), and *Petang Dasa* (40 threads) which is already extinct. The main function of *Geringsing Cemplong* is for traditional clothes used in particular religious ceremonies.

It has two patterns namely *Geringsing Wayang Kebo* and *Geringsing Wayang Putri*. Both fabrics' sizes are identically the same. The both are also functioned as scarf. The only thing that differs the



<Fig. 9> *Geringsing cemplong*. (Source: Hauser, 1991)



<Fig. 10> *Geringsing wayang, eagle woven cotton with embroidered edges*. (Source: Wastraprema, 1993)

both is the pattern. In *Geringsing Wayang Kebo*, the scorpions (*teledu*) are tied to each other while in *Geringsing Wayang Putri* do not. *Geringsing Wayang Kebo* consists of male and female traditional puppets pattern, while *Geringsing Wayang Putri* only consists of female traditional puppet pattern.

III. The Analysis of Correlation between Variety of Decorative Patterns Weaving Geringsing and the Custom & Culture of Tenganan Pegerringsingan Villages Myths

1. Analysis from myths point of view

The shape of the ornaments or the patterns of Geringsing woven are in accordance with the village's myths which came from the highest God named Dewa Indra. Balinese citizens commonly consider dewa Indra as the War God, while people from Tenganan Pegerringsingan village believe that dewa Indra is the God of the God. They also believe that they are descendants of dewa Indra which makes them call themselves as Bali Aga or the original Balinese the descendants from the god.

Tenganan people still worship dewa Indra until now. It is proven by the existence of *pandan war* which is a regular ritual to worship Indra. This strong belief causes the myths that say decorative patterns patterns of Geringsing came from dewa Indra's guidance. Once upon a time, when the night fell dewa Indra saw the reflection of stars and the moon through a water vessel. He asked female citizens to weave the pattern of the reflection of stars and moon to be a beautiful cloth which is now believed as the heritage cloth of Tenganan village, Geringsing woven. The citizens believe that he shapes of star and moon has been the foundation of Geringsing woven patterns. It is proven that varieties of Geringsing woven including *Geringsing Lubeng*, *Geringsing Cemplong*, *Geringsing Isi* and *Geringsing Batan Tuug* have the same

main pattern which looks like a star. From that history, it is believed that Geringsing has a magical power which has a strong connection with the myth of dewa Indra.

2. Analysis from anthropological view

In terms of the form of ornamentation when it is analyzed from historical factors, social and anthropology can be described as follows; in the time when the nation was still consisted of kingdoms, there was a phase in which Indonesia became a favorite stopover for foreign sailors. Due to the strategic location of Indonesia that was located in the trade road between Asia and Europe at that time, there were many traders who stopped even to settle in coastal Indonesia. Included the island of Bali, at approximately 100 century, came merchants from Gujarat, India who entered the territory of Bali and give a lot of influence in the form of ideas, thoughts, and diverse cultures, one of which is woven fabric with double binding weaving technique which is a famous fabric from India, *Patola* fabric. *Patola* fabric is fabrics that was brought to be traded by the Gujarat merchants, but has indirectly affect the culture of Balinese community especially in Tenganan village. Not only the fabric that was brought by the traders but also the teaching about the techniques to make a sheet of fabric with double weaving technique. The techniques taught are merged with the existing culture in the village of Tenganan.

In addition in terms of technique, the decorations that formed on Geringsing woven (star form a rectangle) is also influenced by the ornamentation of India *Patola* fabric. In a Weaving book published by Cita Weaving Indonesia it is described as follows;

“They frequently have a large centre field filled with repetitive motifs, and these particular have had a huge impact of woven textiles. One of the most common design elements is the eightpointed



<Fig. 11> Variety of Decorative on India Patola Fabrics brought by Gujarat traders, similar to the Variety of Ornamental on Geringsing Woven. (Source: <http://hubpages.com/hub/patanpatola>, <http://melissaenderle.blogspot.com/2011/05/patan-and-patola-weaving.html>)

rosette enclosed in a square, circle or lozenge shape.”

Based on the above explanation it is clear that there are similarities on decorative or motifs on Geringsing woven fabrics and *Patola* fabric. It strengthens the influence of Gujarat traders in the process of establishing the origin of Geringsing woven. Moreover, the fact is discovered that the motive was not only affect the Tenganan village and Bali, but also affects the batik from Java, *Jelamprang* motif, has a similar motif in common on Geringsing woven and cloth weaving *Patola*. Indonesian society in the past adopted it and creating it in accordance with the local culture.

IV. The Role of Geringsing Fabric on the Society of Tenganan

1. Geringsing as a ritual object, used in ceremony at Tenganan

Literally Geringsing consists of two words; *Gering* and *Sing*. *Gering* which means pain and *Sing* which means no, so that Geringsing means no pain, its meaning is by wearing Geringsing woven fabrics anyone would be avoided from a variety of dangers and diseases. This fabric is so sacred, so the villagers always use it as clothes when traditional ceremonies are being held, hoping to avoid themselves from the disturbing demons and various diseases. Based on the research by Ramseyer:



<Fig. 12> The use of *Geringsing*, as pillow in *metatah* atau *mepandes* (cutting teeth) ceremony. Source: Hauser, 1991.

2009, it is mentioned that *Geringsing* woven not only maintain the sanctity and protect the village from danger, but also protect human life during the transition period of his life at the time of implementation of the ritual.

Among the *Geringsing* woven, *Geringsing wayang* as above has the highest magical value as a protective and repellent reinforcements. Variety of four tipped large star split the woven in large curved area filled with a variety of three-figure puppet. Similar to Balinese, China and East Java shadow puppets, in Tenganan, *Geringsing wayang* is used by women in ritual dances and traditional ceremonies as *anteng* or scarf. On the other area of Bali it is used as a pillow cover on teeth cutting ceremony; also laid on the coffin.

In Tenganan Pageringsingan, *Geringsing* is used as a ceremonial costume by the perpetrators of the ceremony both for the men and women. Elsewhere on the Bali island, *Geringsing* considered very auspicious so its use in the ceremony not as a fashion, but rather as repellent reinforcements and the like. As the examples of the use of such *Geringsing*, for example, as pillow in *metatah* or *mepandes* (cutting teeth) ceremony, bridal *pemapah*, decoration on cremation towers (*ngaben*) and temples (*pura*), as well as complementary of 'healing' ritual.



<Fig. 13> The use of *Geringsing*, as traditional ceremony costume and as the offerings complement at the 'healing' ceremony. Source: Tenganan, 2010



<Fig. 14> Use of *Geringsing* as part of clothing in religious ceremonies used in the frontside to cover the chest. Source: Tenganan, 2011

3. *Geringsing* as a commodity, Bali tourism support

Behind all the interests of indigenous and sacred values, the making of *Geringsing* fabric also has economic motivation. Motivation for the preservation of cultural heritage of the Balinese ancestral and environmental balance of the area is closely linked to the sustainability of the rotation wheel-woven fabric manufacture, and turnover in terms of marketing, which mutually reinforce each other.

In the development of Geringsing fabrics is made not only to meet the needs of rituals of the community, Geringsing is allowed to be sold to outsiders, as a souvenir objects. In line with the opening of the Tenganan Village for tourists, which was formally inaugurated by the government of Bali as a rural cultural heritage and rural tourism since the 1970's. In previous eras Geringsing fabric had almost become extinct due to lack of interest by young people in society to continue to learn weaving Geringsing because of the very high level of difficulty.

As the anticipation, the government has made various efforts to promote the area as part of tourism in Bali. Gradually tourists from abroad began to familiar with Geringsing and appreciate it as collectibles. It becomes a driver for the society to hand down to the younger generations, so the Geringsing cloth making remain stable. Among the efforts to promote Tenganan village there are various rituals that are allowed to be visited by the tourists, which are held regularly every year. One of which is a series of *Ngusaba Sambah* ceremonial procession held in every June that lasted for 30 days. The peak of the ceremony is *Mekaré-kare* or better known as the "pandanus war". At this event Geringsing fabric is used by the players in the ceremony.

V. Conclusion

A traditional natural dye in textiles is a valuable cultural asset for the people of Indonesia. At present, the use of natural dyes is very relevant when viewed from the environmental and cultural aspects of local excavation.

Geringsing as one of Indonesia's cultural heritage that uses natural dyes and still survive until this day, a cloth woven heirloom passed down from generation to generation by our ancestors. The existence of weaving gives extraordinary influence

to the development and life of village residents.

Although Geringsing now can also be called as a commodity that support tourism in Bali, but its role as ritual objects is not neglected, it is mutually reinforcing the existence of the fabric. Motivation for the preservation of cultural heritage of the Balinese ancestors and environmental balance of the area is closely linked to the sustainability of the wheel/turnover manufacturing woven fabrics, and turnover in terms of marketing, which mutually reinforce each others.

The diversity and uniqueness of Geringsing fabric has brought the village in triumph, it is an asset that must be kept. Undeniably that the presence of a high value heritage from Tenganan Pegeringsingan village will continue to bring the village on the glory, as long as the heritage preservation is maintained and preserved.

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References

- Anas, Biranul(1999). Revival of natural colours, "Pewarna Alam, Mencari Peluang Kehadirannya Di Masa Kini". *Journal of Nation Craft Council of Indonesia (DEKRANAS)*, Yogyakarta.
- Cita Tenun(2011). *TENUN*. Jakarta: Bab.
- Darmaprawira, Sulasmi(2002). *WARNA*. Bandung: Penerbit ITB.

- Dean, Jenny(1999). *Wild colour*. London: Octopus Publishing Group Ltd.
- Departemen Pendidikan dan Kebudayaan(1982). *Sistem Gotong Royong Dalam Masyarakat Pedesaan Daerah Bali, Departemen Pendidikan Dan Kebudayaan, Proyek Inventarisasi dan Dokumentasi Kebudayaan Daerah*, Jakarta.
- Donder, I Ketut(2007). *Viratvidya, Kosmologi Hindu, Penciptaan, Pemeliharaan, Dan Peleburan serta Penciptaan Kembali Alam Semesta*, Paramita, Surabaya.
- Eiseman, Fred B.(1990). *Bali, Sekala & Niskala, Essay on Religion, Ritual, and Art*. Tokyo: Tuttle.
- Gillow, John(1995). *Traditional Indonesian Textiles*. London: Themes and Hudson LTD.
- Hauser, Brigitta, dkk.(1991). *Textiles in Bali*. Berkeley: Periplus Edition, Harper & Row, Publisher, Inc.
- Himpunan Wastraprema(1993). *Bunga Rampai, Wastra Bali*. Jakarta: Jayakarta Agun Ofset,
- Kartiwa, Dra Suwati M.Sc.(1987). *Tenun Ikat, Indonesian Ikats*. Jakarta: Djambatan
- Ramseyer, Urs.(2009). *The Theatre of The Universe*. Basel: Museum der Kulturen.
- Remawa, A.A.Gede Rai.(2009). *Pengembangan WarnaBali dengan Teknik Modern sebagai Upaya untuk Meningkatkan Nilai Jual Produk Lokal*, ISI, Denpasar.
- Sachari, Agus.(2002). *Estetika, Makna, Simbol dan Daya*. Bandung: Penerbit ITB.
- <http://kubujingga.blogspot.com/2010/02/sejarah-tenangan-pegringsingan.html> dikases tanggal 27 Juni 2011