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Eichhornia Crassipes as a Media of Woven Crafts in Coastal Communities of Minahasa

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Abstract:
Water hyacinth lives floating in the water and sometimes takes root in the ground. The height is about 0.4 - 0.8 meters. It has no branches. The leaves are single and oval in shape. The tip and base are tapered, and the bottom of the petiole is bulging. The leaf surface is smooth and green. The flowers include compound interest in the form of grains, and the petals are tubular. The seeds are round and black. The fruit is a box of three bears and is green. The root is fibrous. Water hyacinth grows in shallow ponds, wetlands, swamps, slow-flowing water, lakes, water reservoirs, and rivers, and water hyacinth is also considered a plant that pollutes the surrounding environment (lakes and waterways). However, from this water hyacinth, we can produce woven crafts as souvenirs and decorations and can also function as disposable (functional) objects. The existence of woven water hyacinth crafts is almost unclear because people often need to learn the benefits of water hyacinth and how to process it. So, the extent of public knowledge about the Craft of water hyacinth cannot be explicitly measured. There is a significant influence on the use of water hyacinth with woven art for the coastal community of Lake Tondano, especially Watumea Village, Eris District, indicated by X^2 count=6.45 while X^2 list=5.99. The amount of influence between the use of water hyacinth and the results of woven art for the people of the shores of Lake Tondano, especially Watumea Village, Eris District, is 55%, while other factors influence the rest.
Keywords: Water hyacinth, Crafts, Woven, Coastal.

1 Introduction

Craft art evokes hand skills in creating and prioritizes forms and crafts designed for specific functions. The advantage of several art and craft products is that they have a dual role: decoration and physical. In addition, this craft or craft art is considered unique and high-quality because it is supported by high craftsmanship. Craft art – When discussing fine art, we can also discuss craft art as a branch of fine art. This art's results can provide such a high selling value. So that processed materials or craft objects made with a touch of craft art can be used as a livelihood for everyone. Indonesia itself has a lot of wealth, especially in the arts.

Research previously about the utilization of water hyacinth goiter has done that is (Nurazizah Aliah, 2022), (Zumani et al., 2015), (Sittadewi, 2007), (Dwi Ratnani et al., 2010), (Karyawan et al., 2022), (Wolok et al ., 2020), and (Samsudin & Husnussalam, 2017). water hyacinth goiter (Eichornia crassipes / Mart) (Solms) is an aquatic plant most giant living _ float free (Dinges, 1982), mentions, water hyacinth goiter including the family Pontederiaceae (Gerbono, A. and Siregar, 2005). From a number, the view presented _ is what stretches back so that activity weaves important to introduce and teach to coastal communities _ _ _ lake Tondano, via submit results work from water hyacinth goiter to society is expected can grow and develop so that water hyacinth goiter No Again become a threat

for society and Government Regency Minahasa, order water hyacinth goiter This can bring blessing to every public local under what is expected and what is not harm.

Concerning the material used _ in producing results work, Woven craft art is very diverse. Start from the raw material to the motifs and patterns used (Dwiputri et al., 2022). speak materials used, almost _ every area has distinct characteristics and different materials. However, if studied more in principle _ types of material at first originate from raw natural and unused materials. Again or the ingredients around man, among others: Bamboo, rattan, water hyacinth goiter, Ingredients remnants/scraps used (bottle kind aqua, paper, plastic, cloth, gardus).

This will be lifted in the discussion study. This creates woven crafts _ from water hyacinth goiter because We know together that Water hyacinth or water hyacinth (Latin: Eichhornia crassipes) is a type of aquatic plant float. Apart from being known as water hyacinth, in several areas in Indonesia, water hyacinth has other names such as in the Palembang area, it is known as Kelipuk; in Lampung, it is known as Ringgak; in Dayak, it is known as Ilung-lung; in Manado, it is known as Tumpe. Water hyacinth was discovered accidentally by a scientist named Carl Friedrich Philipp von Martius, a German botanist, in 1824 while on an expedition in the Amazon River. Brazil (Dinges, 1982) . Water hyacinth has a high growth rate, so this plant is a weed that can damage the aquatic environment. Water hyacinth quickly spreads through waterways to other bodies of water. Water hyacinth lives floating in the water and sometimes takes root in the ground. The height is about 0.4 - 0.8 meters. Has no branches. The leaves are single and oval in shape. The tip and base are tapered, and the bottom of the petiole is bulging. The leaf surface is smooth and green. The flowers include compound interest in the form of grains, and the petals are tubular. The seeds are round and black. The fruit is a box of three bears and is green. Its roots are fibrous. Water hyacinth grows in shallow ponds, wetlands, swamps, slow-flowing water, lakes, reservoirs, rivers, and water hyacinth goiter. This is also considered something polluting plants _ environment (lakes and waterways). However, from water hyacinth goiter, We can produce weaving crafts _ from souvenirs and decoration and function as object wear (functional).

Weaving craft activities from water hyacinth goiter This almost No clear existence Because often society _ does No know What benefit of water hyacinth goiter as well as the No see the method of processing. So No can be measured in a manner particular about as far as knowledge public about results work craft art from water hyacinth goiter.

Related problems _ about the process of water hyacinth goiter becoming weaving craft results are still significantly lacking understood by the society around Lake Tondano. If compared to with results work the resulting Craft of bamboo, like the case city Tomohon specifically in the village know that produces various craft art from bamboo Good as decoration or as object wear, besides That water hyacinth goiter impressed just A rubbish or polluting dirt _ lake, no realize that water hyacinth goiter is very useful in work art shape more special work wicker craft. _ The amount of public coast Lake Tondano that doesn't realize that water hyacinth goiter is a blessing for the public coast lake tondano If they know the method process and create work from water hyacinth goiter. Problems in nature, generally in producing work, craft, hands, and art, include a lack _ of knowledge benefits of water hyacinth goiter, no own room practice, and lack of understanding as well as knowledge public about process water hyacinth goiter.

2 Literature Review

Craft art is one of the works that is still popular and has many enthusiasts. Many handicraft items that have high value come from the hands of reliable artists in Indonesia. Since formerly until Now, This

craft art has not Once free from life human. Craft art appears in various equipment that need humans. Start from clothes or clothing, furniture, House ladder accessories, body, people, and buildings (Dwiputri et al., 2022). Besides, Likewise, craft art can be found in objects that use something else, like bags, wallets, shoes, hats sandals. So, the art of wickerwork, which results from craft art, is significant and unified with the life of people/society before discussing this art in more depth. The first thing we will learn together is the meaning of the craft art itself. As previously explained, this art is a branch of fine art. With such high craftsmanship and combined with this touch of art. Then the process will be able to produce craft objects that are so high. Some examples of these art objects are decorative carvings on wood or stone media, masks, matting, and other objects. Etymologically, Craft comes from Sanskrit, namely work, which means to do. Then the word develops into work, Craft, and work. From this explanation, it can be concluded that Craft is a creative activity that can produce objects or objects. And for objects made from these creative activities, it can be called craft art.

3 Methodology/Materials

This study uses a qualitative method with an approach to phenomenology that is meaningful research _ To understand the variation utilization of water hyacinth goiter. Study This was done in the city of Tondano, in particular area Paleloan area coast of Lake Tondano, materials his research plants water hyacinth goiter, and who became subject of his research is the public area coast of Lake Tondano. Study This was done over one month by Observing and analyzing the crafting process of people's hands _ _ coast Lake Tondano. Study This started with observing the utilization of water hyacinth goiter, which then next with studying underlying aspects _ utilization of water hyacinth goiter as well as the aspect of making art craft woven. Furthermore, the data obtained from the analysis produced variation in the utilization of water hyacinth goiter in woven art craft. Findings phenomenon field furthermore dialogued with unified theories _ To make findings end the study (Witari et al., 2020). The results of this final study are again summarized in the form of drawn conclusions _ through reasoning in a manner inductive. Data collection techniques in research This is through studies libraries, observation, documentation, and interview with sources _ like leader village, craftsman art woven, and the owner land plant water hyacinth goiter, which is determined with purposive sampling technique.

There are three types of water hyacinths. river hyacinth, swamp hyacinth and pond hyacinth. The best is the swamp hyacinth. Swamp water hyacinth has a relatively strong fiber that does not break easily when it is processed into a handicraft product. The process of producing water hyacinth crafts is water hyacinth that has been cleaned, then dried in the sun until it is scorched. Usually, drying (drying) takes one week. The dried hyacinth is then sorted by color and length. After sorting, the dried water hyacinth is soaked in hydrogen peroxide (H2O2) solution for about half a day (six hours). This aims to make the dried water hyacinth cleaner, remove the fungus/fungus that sticks to it, and remove the spots that stick. After the six-hour soaking process, the water hyacinth is dried again for up to three days and then split into sheets of various sizes (according to the purpose of manufacture and the craft product) to make it easy to weave. The resulting sheets must still be pressed to flatten according to the desired thickness. After they become sheets, they have to make them into handicraft products depending on or based on the pattern that has been prepared. Usually, these sheets are used for plaits or braids. After the process of making the parts needed is complete, now the assembly process is required. After the

assembly is complete, just finish and finish by giving impro and spraying melamine. This is done so that the resulting product becomes stiff, durable, shiny, and looks more attractive.). Crafts made from water hyacinth are ready to be marketed.

4 Results and Findings

Art and Craft is part of Aesthetics and Creative Expression, Art and Craft is part of Arts and Crafts activities, which describes various activities that involve making things with their hands and skills. This is a fun method to explore your creative side and express it through arts and crafts. Since arts and crafts are related to anything you make by hand, plants can even be used for it. Some examples include basket weaving, pressed flower crafts, and more. This is a hobby for many people because it is fun and helps train your motor skills. In addition, Arts and crafts are one of the activities related to art, such as drawing, coloring, mixing colors, cutting, pasting, shaping, or other activities to produce a work or Craft. This activity can be done individually or in groups. In the study, this will be picked up is water hyacinth goiter Because water hyacinth goiter is accessible material _ found in the area of Lake Tondano and is something plant bully (weed) for society and local government.

Quality goods Crafts are heavily influenced by quality material default. Material-making craft water hyacinth goiter consists of material Main and ingredients complement. The primary material is stalk water hyacinth goiter dry. Temporary material complementary Still distinguished Again become content complementary trees and materials complementary addition.

Material complementary trees include water, dyes, and preservatives. Material dye covers material dye natural and synthetic dyes. Material dye experience, for example, tea leaves, betel, leaf teak, leather tree mahogany, and others. Material dye synthetic form naphthol, Sumba (deres), and others. The material preservative used _ covers sour borate, bleach, and so on.

Material complementary addition needed following types (kinds) of crafts water hyacinth created goiter. _ Type material complementary usual additions _ used is cloth, thread nylon, cotton thread (thread sewing), paint (melamine), nails, and others.

Making Matting water hyacinth Goiter

Handicraft is one example of a work of art that is made by relying on the craftsman's hand skills. There are various types of basic materials that we can use, and each of these essential materials has its characteristics. One of the natural materials that we can use in making handicrafts is water hyacinth, where we will apply the woven technique. A critical aspect of using water hyacinth is that we have to make sure it is completely dry before use. Water hyacinth craft is a craft made from water hyacinth. Various crafts can be produced from the water hyacinth raw material, such as bags, sandals, souvenirs, food covers, cell phone pouches, toy cars, and various functional items such as tables and chairs. Making matting water hyacinth goiter made with insert stalk water hyacinth goiter dry form assemble cross and overlap. Stalk water hyacinth goiter to be woven must be pressed, especially Previously, for more dense and flat. Woven patterns and motifs stalk water hyacinth goiter distinguished become three types, that is matting sausage, woven braids, and plaits edge (webbing ribbon). Type matting sausage or braid can be developed and modified and combined with webbing ribbon to form various woven patterns and patterns.

In principle, the weave is compiled warp and feed. Lusi is stalk water hyacinth arranged goiter _ longitudinal, -* whereas feed is stalk water hyacinth arranged goiter _ transverse.

Matting sasag is a woven motif made with the method of lifting or laying down One stalk warp or feed and inserting One stalk (strand) feed or warp. Woven motif This is called matting lift One insert One

A matting braid is a woven motif made with method lift or superimposed two strands feed/warp or more with insert two strands warp/feed or more. Pattern matting This is called matting lift two inserts two.

Matting edge or woven ribbons are motif motifs comfortably made _ with method lifting, folding, and inserting One feed/warp or more. Ribbon webbing is required as retainer or edge fastener _ _ _ matting so as not to easily break and escape scattered.

1. Webbing Sasag

Steps _ making matting sasag is as follows:

- Several stalk water hyacinth goiter arranged lined up, lined up regular as warp.
- The arrangement warp tidied up, and the base (end) of the arrangement warp on top with beam wood.
- Lusi at the very end or edge (back left) and dilutions were number odd (warp third, fifth, seventh, and so on) lifted and held tight with fingers hand left.
- Stalk water hyacinth goiter as feed tucked in between warp that is lifted (held) with hand left.
- Next, warp number even (warp second, fourth, sixth, and so on) from the side left lifted and stalked water hyacinth goiter as feed pasted between reproach warp even the.
- Every feed that has pasted between gap warp must close up so that form arrangement tight weave. _
- Work weave feed and warp did in an alternate manner so that insert feed and warp the form intact and tightly woven. _

Matting sasag can develop and be modified to become various motives or pattern matting interesting sag. _ Steps _ manufacture and samples results modification matting sasag can be seen in pictures 8 and 9.

2. Webbing Braid

In principle, manufacture matting braid similar to matting sausage. Steps _ making matting braid is as follows.

- Some stalk water hyacinth goiter dry arranged lined up as warp.
- Arrangement warp the tidied up and root or end arrangement on top with beam wood.
- Lusi first and second from end left, warp fifth and sixth, warp ninth and tenth, and so on lifted. Two stalks of water hyacinth goiter as feed inserted (inserted) side by side.
- Furthermore, warp third and fourth, warp seventh and eighth, warp eleventh and second twelve, and so on lifted. Two strands feed woven between reproach raised warp _ the. All partner warp and feed that has been woven close up.
- Work weave feed and warp did in a manner alternate so that form intact and tight weave _

Matting braids can be developed and modified to become many patterns or a very interesting woven motif. Steps _ manufacture and samples results modification matting braid can be seen in Figures 10 and 11.

3. Woven Ribbon (Webbing edge)

Webbing ribbon (edge) is a retainer and reinforcement sheet woven. Anyman This can be made in interesting patterns _ so that it can add beauty from intact sheet woven and customized with appetite artisan. Patterns and variations of woven ribbons can be developed and modified to become matting strong, beautiful, attractive, and elegant. _ _

a. Anyman ribbon two (big ribbon)

The matting edge of a two-band pattern (ribbons) is used for sebai amplifier sheet narrow webbing (no _ width). anyaman form This can make direct with fold and insert ends feed and warp sheet matting or with fold and insert sheet feed and warp. The steps for making matting edge band pattern two are as follows.

- One strand stalk water hyacinth goiter folded from letter V. One sheet of water hyacinth another goiter is pasted over the fold.
- Base stalk water hyacinth inserted goiter _ in the side left and right folds water hyacinth shaped goiter _ folded V _ right and left so that form the letter U. Each fold pasted under folds previously so form matting basic.
- Work weave the next until sheet water hyacinth goiter is woven perfectly.

To make webbing two long ribbons, the webbing can be connected with sheets of water hyacinth, another goiter inserted at the ends folds. Steps _ making matting edge two-band pattern

b. Triple Ribbon Woven

Matting edge triple band pattern known with designation matting overlapping three. Steps _ making matting edge triple band pattern is as follows.

- Two strands of water hyacinth goiter dry arranged overlapping.
- one _ sheet is folded form formation (arrangement) lined up, whereas another strand is folded and pasted over the folded strand so that form band formation.
- Weaving ends sheet next until finished so that the whole sheet.

c. Four Ribbon Woven

Steps _ making matting edge four-band pattern is as follows.

- Four sheet stalk water hyacinth goiter dry arranged lined up.
- End of the arrangement sheet the on top of the beam wood.
- Edge sheet _ folded and tucked (pasted) on the strands other.
- Furthermore, a sheet nearby is folded and tucked (pasted) again on another sheet, so if it folds interlocking strands _ inserting the behind will look like pasted overlapping sheets _ overlapping.
- The matting sheet reversed. The very end folded and tucked Again between sheets other.
- Work weave the next so-formed framework ribbon webbing.
- Framework woven ribbon that has been formed reversed and secured next Again until formed four webbings. _

Water hyacinth (Eichhornia crassipes) is an aquatic plant that thrives in water. Excessive growth can disrupt marine ecosystems and human activities in the vicinity. Therefore, it is essential to find solutions to manage the development of water hyacinths. One approach that can be taken is to use water hyacinth as a raw material for woven crafts.

Using water hyacinth as a medium for woven crafts shows an innovative and sustainable approach to addressing environmental challenges while fostering creativity and economic growth.

1. Economic Impact:

- Business Opportunities: Using water hyacinth as a medium for handicrafts can create new business opportunities for the community. They can produce and sell handicraft products from water hyacinths, such as bags, hats, storage boxes, wall hangings, etc. This can provide additional income for residents and encourage the development of the handicraft sector.
- Increased Income: The community can increase its income by having a water hyacinth handicraft business. In some cases, using water hyacinth can also reduce production costs because raw materials are abundant and cheap.
- Tourism: If handicrafts from water hyacinths become a tourist attraction, this can increase the number of tourist visits to an area. Tourists who are attracted by these handicrafts will have a positive impact on the local economy through their spending during the visit.

2. Social Impact:

- Community Empowerment: Utilization of water hyacinth as a medium for handicrafts can awaken the entrepreneurial spirit and creativity of the community. They can be involved in production, training, and developing handicraft-making skills. This can increase self-confidence and empower people economically.
- Increased Solidarity: Handicraft activities from water hyacinth can involve collaboration and collaboration between community members. Communities can help each other and share ideas and skills in production. This can strengthen social bonds and increase solidarity between them.

3. Environmental Impact:

- Ecosystem Control: Water hyacinth is an invasive plant that can disrupt aquatic ecosystems. Using water hyacinth as a medium for handicrafts can help control its growth by using it as a raw material. Thus, using water hyacinths can help maintain the balance of the aquatic ecosystem.
- Recycling: Using water hyacinth as a handicraft medium also contributes to recycling practices and waste reduction. Materials previously considered waste can be reused into products with economic value.
- Environmental Awareness: Using water hyacinth as a raw material for handicrafts can increase public awareness of the importance of environmental protection. By seeing directly the negative impact of the uncontrolled growth of water hyacinths, people can care more about the surrounding environment and participate in efforts to preserve nature.

The use of water hyacinth as a medium for handicrafts has a positive economic impact by creating business opportunities, increasing income, and tourism potential. Socially, this utilization can empower the community, increase solidarity, and strengthen social ties within the community. The resulting environmental impacts include controlling ecosystems, recycling materials, and raising environmental awareness. Water hyacinths as a raw material for handicrafts can create synergy between economic development, social welfare, and environmental protection. However, it should also be noted that using water hyacinth as a raw material for handicrafts must be done wisely and sustainably to minimize negative impacts on aquatic ecosystems.

In addition to the economic, social, and environmental impacts previously mentioned, the use of water hyacinth also has other benefits, including:

1. Sources of Local Plant Raw Materials: Water hyacinth is an aquatic plant abundant in various waters, especially in the tropics. Water hyacinth as a raw material for handicrafts utilizes easily accessible local resources, reduces dependence on imported raw materials, and promotes the sustainability of local resources.

2. Aesthetics and Product Uniqueness: Water hyacinth has solid and unique natural fibers. In handicrafts, water hyacinth fiber can be processed into various attractive shapes and designs. This gives a unique aesthetic to handcrafted water hyacinth products, making it an attractive choice for consumers looking for a different and natural product.

3. Water Filtration: The hyacinth can filter and absorb excess nutrients. On a broader scale, water hyacinth can be used as a natural and environmentally friendly water treatment method. Water hyacinths can help remove contaminants and excess nutrients in the water, thus helping to improve water quality in the waters.

4. Reduction of Carbon Emissions: During its growth, water hyacinth absorbs carbon dioxide (CO2) from the air to carry out photosynthesis. By using water hyacinth as a raw material for handicrafts, we can reduce the amount of CO2 in the atmosphere and contribute to reducing overall carbon emissions.

5. Environmental Education and Awareness: By using water hyacinth as a raw material for handicrafts, awareness and knowledge about the importance of protecting the environment can be increased. The production process and promotion of these handicraft products can be used to educate about the negative ecological impacts of uncontrolled water hyacinths and the importance of sustainable management.

Control and use of water hyacinth (Eichhornia crassipes) is essential to reduce negative impacts and use this plant in a sustainable manner.

1. Water hyacinth Control:

- Mechanical Control: This method involves using machines or mechanical devices to cut, collect, or remove water hyacinth from the water. For example, water hyacinth-cutting machines can cut and collect these plants from the water's surface.
- Biological Control: Using natural pests or predators from specific ecosystems can help control the growth of water hyacinth. Some examples of biological control include using herbivorous fish or insects that eat water hyacinths.
- Chemical Control: Certain herbicides can be used to control the growth of water hyacinth. However, using chemicals must be done carefully and consider the impact on other organisms and water quality.

2. Benefits of using water hyacinth:

- Utilization as Industrial Raw Material: Water hyacinth can be used in various industries. For example, water hyacinth fiber can manufacture paper, insulation, or building materials. Using water hyacinth as an industrial raw material can provide additional economic value and help reduce excessive water hyacinth growth in waters.

- Utilization in Handicrafts: Water hyacinth is also used as a raw material in making handicrafts such as bags, hats, storage containers, and wall hangings. This utilization provides added economic value to the local community and can provide additional income.
- Water Ecosystem Recovery: Using water hyacinths on a controlled scale can help restore disturbed aquatic ecosystems. Using water hyacinth as a filter medium or removing excess nutrients can help reduce pollution and improve water quality in polluted waters.
- Environmental Education and Awareness: Water hyacinth can also be used as an educational tool and environmental awareness. Through water hyacinth processing and utilization activities, information can be provided about the adverse effects of uncontrolled water hyacinth growth and the importance of sustainable management.

5 Conclusion

5.1 Conclusion.

1. There is a significant influence on _ utilization water hyacinth Goiter with results work art woven for public coast Lake Tondano specifically Village Watumea Eris sub-district indicated by X^2count = 6.45 while X^2list = 5.99.
2. The amount of influence between utilization of water hyacinth Goiter with results work art woven for public coast Lake Tondano, specifically Village Watumea Eris District, is 55%; meanwhile, the rest is influenced by other factors.

5.2 Suggestion

1. Share public coast Lake Tondano, specifically Village Watumea Eris sub-district is necessary to know the utilization material raw There is around We that is water hyacinth goiter with need know method weaves through training formal education, newspapers, magazines, electronic media (radio and television) because need accuracy neatness and beauty or work aesthetics.
2. Government, through industry, can make an effort to use utilization material for workers in the district or the countryside. There is around; specifically, water hyacinth goiters are abundant.
3. service related agencies _ can make an effort existence tools for artisans _ To use support income-quality works _ and have the Power mark sell high. _

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