Educational animation: Environmentally friendly palm oil based products

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Abstract. The size of the palm oil industry in Indonesia raises concerns about environmental sustainability, but on the other hand, this industry is also needed by the community. This has led to the emergence of organizations or institutions that apply certification standards in the palm oil industry, one of which is the Roundtable on Sustainable Palm Oil (RSPO). This animation is created to introduce the RSPO and invite the audience to understand the products made from palm oil that care about the environment. The message delivered about RSPO-labeled products is that the products are more responsible for sustainable environmental issues. This animation production method goes through pre-production stages that focus on the core message, production in the form of visual asset design to the animation process, and post-production for artistic finishing touches. The final result is an educative animated film that is easy to understand and packaged with an attractive design.

Keywords: educational animation, palm oil based products

1. Introduction
As a country located in a tropical climate region, Indonesia is rich in biological natural resources. The potential of forests and plantations has become a natural resource that has been owned for a long time. Oil palm plantations are one of the largest economic commodities in Indonesia. The size of the plantation and palm oil industry in Indonesia, on the other hand, has a certain impact on the environment. Deforestation is a major problem that also impacts endemic animal populations in Indonesia, such as orangutans, Sumatran Elephants, and Sumatran Tigers. Due to the damage and loss of their habitat area, these animals are endangered.

The negative impact arising from the size of the palm oil industry raises concerns about environmental sustainability, but on the other hand, this industry is also needed by the community. This issue has led to the emergence of organizations or institutions that apply certification standards in the palm oil industry. One of them is the Roundtable on Sustainable Palm Oil (RSPO).

RSPO is one of the standards in sustainable palm oil production. With the principles applied, the RSPO invites various parties involved in the palm oil industry to work together to build a sustainable palm oil industry.
Unfortunately, from the perspective of buyers (consumers) in Indonesia, they also realize that they can contribute to environmental damage by buying products made from palm oil. Thus, the public needs to be educated with information about environmental sustainability and the importance of sustainable production.

The problem faced is the lack of public understanding of the influence of the use of palm oil-based products on the environment and the lack of community knowledge about RSPO or environmentally labeled products.

Creating a series of campaigns on this issue takes a lot of material and a long time. This educational animation is Nathania's final project as a designer and animator. Through a variety of discussions and research focus, the animated theme is found, namely, the sustainable palm oil industry problem. One way to educate the public is through educational animation. Through an animation that explains the process chain of products made from oil palm, the audience will easily find out products that need special attention in consuming them.

1.1. Deforestation of Sumatra forests
In the book of “Potret Keadilan Hutan Indonesia” (Portrait of the State of Indonesia's Forests) in 1996-2000, the deforestation rate in Indonesia reached 2 million hectares per year. Over the next ten years, the deforestation rate reached 1.5 million hectares per year, and this 2009-2013 Forest State Portrait found a deforestation rate of 1.1 million hectares per year [1].

The forests in Sumatra are home to species that are classified as almost extinct as Sumatran elephants, Sumatran rhinos, Sumatran tigers, and orangutans. In 2014, Sumatra lost 13.9 million ha (55 percent) of the forest from all-natural forests. WWF data said Sumatra lost 1.7 million ha of forest in 2008-2014 or 2.9 percent per year outside of protected areas. If the rate of deforestation is not stopped immediately, it is estimated that 5 million ha of Sumatra's forests will be lost in 2020-2030. In Sumatra, Riau province is the center of palm oil production. As a result of ongoing production, many ecosystems are damaged and become endangered.

1.2. Roundtable on Sustainable Palm Oil (RSPO)
RSPO is a multi-stakeholder global initiative on sustainable palm oil. RSPO members and participants in their activities come from various backgrounds, including plantation companies, processors and traders, consumer goods producers and retailers of palm oil products, financial institutions, environmental NGOs, and social NGOs. They are from many countries that produce or use palm oil. The RSPO's vision is to "change the market by making sustainable palm oil the norm". Palm oil producers that have been RSPO certified must comply with several regulations committed to transparency and responsible to the environment, farmers, and mills to natural resources and related legal rules.

Based on data from the RSPO as of June 2019, the RSPO has 4349 members from 94 countries globally. In Indonesia, 106 members have joined the RSPO certification. For a globally certified area, there is already 3.89 million ha of RSPO certified area. Indonesia is one of the largest certified areas surpassing Malaysia and Latin America, with 1.9 million hectares. Meanwhile, RSPO-certified Crude Palm Oil (CPO) produced by Indonesia has reached 7.40 million tons from total global production of 14.29 million tons. Unfortunately, currently, Indonesian products in the market with the RSPO trademark are still very limited. The examples are Motherchoice Margarin and Rondoletti.

1.3. RSPO ecolabeling and #BeliYangBaik Festival
#BeliYangBaik Festival (buy the good festival) is a campaign for the public to be more willing to ask questions about the origin of the purchased products and introduce to the public products about environmentally-friendly, such as FSC, MSC, ASC, and RSPO [2]. Ecolabeling is a label of a product that has better overall environmental preferences. Unlike the symbols claimed by the factory or service providers themselves, eco-labels are provided by third parties who do not take sides with products that meet specified environmental criteria. Purchasing a label is one way of delivering information to
consumers about the environmental quality associated with the product, one of which is presented in Figure 1.

![RSPO Label](https://ipqi.org/sekilas-tentang-rsporoundtable-sustainable-palm-oil/)

**Figure 1.** RSPO Label.

1.4. **Communication & messages approach**

1.4.1. **Bloom's taxonomy approach in educational animation**

To make the concept of educational animation, the cognitive approach in bloom taxonomy becomes the initial reference, namely in the section to remember and understand information. For the cognitive area, there are several levels of optimal learning. Bloom's taxonomy developments provide an overview to help to broaden the basic set of teaching to achieve the intended target [3]. The following categories are the dimensions of cognitive processes:

- **Remember**: cognitive processes related to the process of remembering are recognizing and recalling.
- **Understand**: it is the understanding of what is learned to arrange the meaning of the message, verbally, and in writing and graphs provided in learning.
- **Apply**: the results of knowledge are applied. Application is closely related to procedural knowledge.

The three approaches become the main reference in conveying the animated message created. The stages of analysis, evaluation, and creation are not the purpose of the message.

1.4.2. **Principles of animation supporting educational animation**

In making this educational video, the designer uses 12 animation principles based on the animation movement. In making this educational animation, the designer uses 12 animation principles based on the animation movement. The 12 principles include Arc, Squash and Stretch, Anticipation, Secondary Action, Exaggeration, Solid Pose, and Appeal. In addition, several principles need attention in the process of making this educational animation, namely:

- **Slow in and slow out**
  The movement of humans and other objects requires time to accelerate and slow down. This principle is applied in character movements between two extreme poses and moving objects [4]. Animation of objects and humans need to pick up momentum before the object can reach full speed. Likewise, it takes time to reduce speed before the object can stop completely. You could say there is the ease in and ease out in moving the animation used.

- **Follow through and overlapping actions**
  When a character enters a scene reaching a spot for his next action, he often comes suddenly and stops. It is stiff and does not look natural, but nobody knows what to do about it [4].
Staging is a presentation of obvious and unambiguous ideas [4]. Influenced by theater principles, staging helps build moods, create focus, and clarify what is happening at the scene. The goal is to create an audience focus and clarify what happens at the scene. No matter how good the character created in the animation, the character must have a strong character and charisma that can be trusted and accepted by the audience to enter into the story. Thus, the audience can attach to the character.

- Timing and spacing
  Timing is the rhythm of an action that occurs, while spacing is a meeting and loosening of images in action. When the ball falls with gravity, the image will be looser (have space). When the ball is bouncing, the picture will be denser because the ball needs time to bounce. Timing and spacing are very instrumental in creating the illusion of motion [5].

1.4.3. Visual design: isometric style for asset visualization
Furthermore, in creating a visual asset design, the isometric approach is used as a reference. Isometric is a visual style that is quite popular among graphic designers. The shape is simple, unique, and has dimensions. It makes the beauty of the design. From the article written by Cousins, C explained that the popularity of the isometric style is increasing because isometric icons look realistic despite using 2-dimensional fields. Making the appearance of flat and depth (flat and depth) the perfect combination [6].

2. Methods
The method used is the production pipeline approach in animation.

2.1. Pre-production
It is the initial process of the concept of messages, scripts, and storyboards, which are the main foundation for the final outcome of educational animation.

2.1.1. Key facts
The pre-production concept is based on the following key facts:
- The public does not know that most of the daily products used are based on palm oil
- The community is not aware that they contribute to environmental damage through the use of daily products made from palm oil.
- The RSPO concept is introduced as a solution to meeting community needs while maintaining environmental sustainability.

2.1.2. Premise
It is providing education about the important role of consumers in using sustainable palm oil products for environmental sustainability and introducing RSPO as a solution to the problems between needs and environmental sustainability.

2.2. Production
Visual design is based on concepts in pre-production and the process of moving objects or characters to animated cinematography.

2.3. Post-production
The production results enter the editing process to strengthen the message by adding sound effects and color correction to be more interesting and artistic.

3. Results and discussion
3.1. Treatment message
The story presented is packaged in simple language so that the audience easily understands it by providing information about palm oil products that can damage the environment. It is followed by a
brief introduction of the RSPO and closed with an invitation to the audience to become critical and active consumers.

3.2. Explanation of animated screenshot

The following pieces of educational animated scenes have the title of "Buy the Good - Buy the Ecolabel." The animation is broadly divided into three message sections.

The first part in Figure 2 presents the facts about nature and the oil palm industry in Indonesia. It tells about Indonesia's natural resources, including the palm oil industry, which needs environmental attention. Palm oil and its derivatives become one of the main export commodities of Indonesia. To meet the world palm oil market's needs, Indonesia has opened millions of hectares of forest and exported tens of millions of tons of palm oil by 2018.

![Figure 2](image)

*Figure 2. Several Scenes About the Condition of Forests and Oil Palm Plantations (Designed and Animated by Nathania).*

Here are some pieces of the script:

"To expand and increase production, all means are used, including forest exploitation and killing of wildlife that are considered pests. Then does the solution require that we no longer consume palm oil? Unfortunately, it's not that simple ... and so on"

In Figure 3, the scenes represent visualizations of some palm oil based products.
Figure 3. The Scene About Palm Oil Based Products (Designed and Animated by Nathania).

The second part as seen in Figure 4 includes introductions to RSPO, RSPO membership, how RSPO certification affects products later through the supply chain. The RSPO is a non-profit organization that works for sustainable palm oil production. The RSPO brings together all parties involved in the palm oil production process consisting of plantation companies, processors and traders, consumer goods producers, retailers of palm oil products, financial institutions, and environmental and social non-governmental organizations. It means that by becoming a member of the RSPO, palm oil management applies sustainable principles in accordance with certification standards.

Figure 4. Several Visual Frames in the Second Part That Tells About the RSPO (Designed and Animated by Nathania).

In the third part, it is about the important role of consumers in the realization of sustainable production patterns. Consumers play an important role in realizing environmental sustainability by
consuming products with RSPO certification. Products with RSPO certification can be identified from the label printed on the package. Unfortunately, we have not met many RSPO-labeled products on the market due to consumers' lack of interest. By choosing RSPO products, consumers indirectly contribute to environmental sustainability. The final scene concludes with an invitation to the public to preserve nature by switching to products labeled RSPO accompanied by the tagline: "Beli yang baik—beli yang ecolabel (buy the good - buy the ecolabel)." The examples can be seen in Figure 5 and Figure 6.

Figure 5. Visualization of the Third Part About the Important Role of Consumers in the Realization of Sustainable Production Patterns (Designed and Animated by Nathania).

Figure 6. Closing of the Third Part About the Realization of Sustainable Production Patterns and Campaign Taglines (Designed and Animated by Nathania).

4. Conclusion
This research initially creates an educational animation of concern for elephant habitat in the area of oil palm plantations. However, due to the large and complex research scope and more obtained data, there is a dilemma between the oil palm industry, communities around oil palm plantations, elephant habitat,
and palm oil-based product industries. The researchers have found a gap in programs seeking to create a connection between environmental concerns and industries, or the RSPO program. The researchers focus on educational animation by introducing palm oil products with the RSPO label, which is environmentally friendly. Educate through animated media is chosen so that communication about RSPO is interesting and accessible to understand. Animations are designed with simple, attractive, and communicative shapes. With this educational animation, consumers are expected to be lured into learning more about the issues of environmentally friendly products, not limited to the RSPO program. Then, they also pay more attention to other environmentally friendly products.

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