

DOCUMENTARY PHOTOGRAPHY:

A CONTENT ANALYSIS OF THE BEST ENVIRONMENTAL PHOTOGRAPHY 2020

FOTOGRAFÍA DOCUMENTAL: UN ANÁLISIS DE CONTENIDO DE LA MEJOR FOTOGRAFÍA AMBIENTAL DE 2020Mohd Piradaus Mat Husain^{1,2}E-mail: p97285@siswa.ukm.edu.myORCID: <https://orcid.org/0000-0003-3805-5835>Mohd Nor Shahizan Ali¹E-mail: shahizan@ukm.edu.myORCID: <https://orcid.org/0000-0001-5134-9059>Ammar Redza Ahmad Rizal¹E-mail: araredza@ukm.edu.myORCID: <https://orcid.org/0000-0002-0827-5901>¹Universiti Kebangsaan Malaysia, (UKM) Malaysia.²University College of Yayasan Pahang (UCYP), Malaysia.

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ABSTRACT

Documentary photography first was defined as the technique of capturing or preserving past events or important issues among the society. Documentary photography usually refers to a popular form of photography used to chronicle significant and historical events. It is typically covered in professional photojournalism or real-life reportage, but it may also be an amateur, artistic, or academic pursuit. Furthermore, photographer is using a documentary photography as a main tool in producing the photographs that attempt to persuade, to inform and to remind the audiences regarding certain issues. One of the main issues is the environmental issues. Documentary photography penetrates every element of our life and the things we aren't usually aware of. Environmental issues, and climate change seems to be taken out as a major contributor to carbon emissions in our society, that has an impact on our lives. Therefore, this study is focusing on the selected 10 documentary photographs from the best environmental issues 2020. A quantitative method has been used which is the content analysis on the 10 selected documentary photographs on the environmental issues. Data were analyzed by using the Atlas.ti. Finding reveals that the characteristic of environmental photographs is divided into four major genres which is air pollution, land disaster, solid waste and water pollution.

Keywords: Documentary photography, environmental issues, content analysis, photographs

RESUMEN

La fotografía documental primero se definió como la técnica de capturar o preservar eventos pasados o temas importantes entre la sociedad. La fotografía documental generalmente se refiere a una forma popular de fotografía que se utiliza para narrar eventos significativos e históricos. Por lo general, se trata de fotoperiodismo profesional o reportajes de la vida real, pero también puede ser una actividad amateur, artística o académica. Además, el fotógrafo está utilizando una fotografía documental como herramienta principal en la producción de fotografías que intentan persuadir, informar y recordar a las audiencias sobre ciertos temas. Uno de los temas principales es el tema ambiental. La fotografía documental penetra cada elemento de nuestra vida y las cosas de las que normalmente no somos conscientes. Los problemas ambientales y el cambio climático parecen ser los principales contribuyentes a las emisiones de carbono en nuestra sociedad, lo que tiene un impacto en nuestras vidas. Por lo tanto, este estudio se centra en las 10 fotografías documentales seleccionadas de los me-

INTRODUCTION

Photography is considered as a communication medium that entails visual display of numerous meanings regarding a problem or situation. Considering the subject of environmental threats. The photographic image's interpretation is designed to shape the audience's understanding and patterning of thoughts. Each photographic image has the ability to impact the audience, particularly those who are frequently exposed to the image. The extent to which the audience is exposed to various photographic images is determined by their level of exposure to communication technologies.

When George Eastman introduced Kodak film as a mechanism for recording images in 1888, it sparked a revolution in photographic development. The popularity of "snapshots" at the time was influenced by the camera industry. Everyone believes the development of photographic has to be simple and economical. The use of terms like "snapshot" has been introduced. The term "snapshot" refers to the capturing of family or community for the purpose of evoking memory.

For individuals who are unfamiliar in photography, the picture film made is more directed toward the current circumstances of a family who was enduring difficulty and sadness at the time due to the industrial revolution. Many topics, such as health and environmental problems, are being used to generate photography subjects with the objective of transmitting information to the public. Around the 1940s, society's interest in photography began to shift, and it was considered as a tool for growth. Images of the conflict were disseminated to the public in order to depict the war's effects, which were a reason of stagnation at the time.

However, it did not successful in changing society's opinion of photography as only a hobby, and it does not play a key role for social change. This demonstrates that the lack of communication technology at the time was a crucial element in photography's inability to be acknowledged as a factor capable of altering society's perception and way of life. The evolution of digital photography has been observed to shift in recent years. During the analogue era, photography was largely utilised for personal reasons, with the photographic picture being preserved only for personal use. This personal photography was made with the intention of capturing fleeting moments. According to van Dijck (2012), the major goal of capturing an image is to develop identity and meaning in communication, and photography provides the viewer with exact meaning about a memory unique image.

The developments in communication technologies of today have revitalised the photographic industry. Photography has piqued the interest of a diverse group of people who wish to share any form of photographic image online. The discovery of photography in the early eighteenth-century BC marking the start of society's knowledge of how to show humans in their truest form. With the introduction of photography into newspapers and periodicals, it has shown to be effective in aiding the audience in grasping a subject.

Gaalen (2013) stated that "not everyone trusts paintings, but people believe images". In recent years, digital photography has mostly replaced traditional film photography. By 2006, most varieties of film and film cameras had been discontinued by all of the manufacturers. While some attention has been paid to how the shift away from film and traditional camera manufacturers has affected businesses in the photo industry, many of the most fascinating repercussions of digital photography can be seen in the ways professionals utilize the photography. The evolution of digital photography has transformed the primary function of a photograph nowadays.

The development of digital photography has now encouraged audiences to constantly share their life patterns with other audiences. Petersen (2008) explains that photographic image sharing has now become part of users' daily activities. Leon (2018) explained the digital photography is a component of the development of photography, which has shifted from purely personal to social photography. The audience believed that the photographic images that has been created should be shared with a varied majority of peoples in order to show their life, culture, and social patterns.

According to Dalziell & Genoni (2015), digital photography is a reliable source of information with its own aims. Rose (2012), photography is capable of affecting and changes the attitudes toward social issues that occur around us, as well as communicating true meaning. McMaster (2015) supports up that statement by stating that photography is the medium capturing the truth or gateway to reality.

Photography has a long and rich history and has evolved into one of the world's most popular subjects or themes. Photography is attempting to grow by incorporating photography with other communication technologies to create a visual communication environment that aids in the teaching and learning process, rather than simply showcasing genuine life, fashion, and personal images. The science of photography, according to history, first came in Malaya in the 1840s, brought in by traders from all over the world.

In 1888, George Eastman created Kodak film as a device for capturing pictures, sparking a photography revolution. The camera business affected the popularity of “snapshots” during the period. Everyone believes that the advancement of photography must be straightforward and cost-effective. Terms such as “snapshot” have been introduced. The term “snapshot” refers to the capture of a family or community in order to elicit memories

Since the 1960s, photography had played an important role in bringing environmental issues to attention. According to Seppänen & Välliverronen, (2003) environmental concerns that are not presented to the public lead the public to lose the motivation to care about environmental issues that arise often. The primary concept for describing environmental challenges is that “the environment cannot talk”. Haila & Levins (1992) indicates that if environmental concerns are not highlighted by techniques such as photography, they will fade into obscurity.

Durden (2000) stated that visual studies are significant because they have a large influence and meaning in shaping the audience’s and culture’s thinking.

The main factors that drive this study to be conducted are based on environmental problems that often occur nowadays. Around the close of the twentieth century, the use of photography is seen to have grown significantly as a result of the development of communication technology, with photographers using numerous media platforms to communicate the interpretation of an issue. Among these are environmental issues that obviously endanger humanity and the planet.

All research problems are seen through the perspective of how photographic images might impact society. This is due to the growth of communication technology, which has created a culture that is more receptive to communicating meaning to the audience. As a result, conveying meaning to the audience through photographic images is viewed as a limitless form of communication with the goal of influencing the audience.

Hanisch et al., (2019) stated that one of the most successful approaches to raise environmental awareness is through visuals that trigger emotions and bring society closer to environmental concerns. The viewer just sees the photographic image at a glance and is unaware of its true importance.

The main objectives of this study are to identify the characteristic of the best environmental photography 2020.

METHODOLOGY

The data collecting procedure employs two approaches: quantitative and qualitative. Both methods are categorized as descriptive analysis and content analysis. This study focuses on the selected of the best environmental photography 2020 created by profesional photographers, which particularly focus on the environmental issues such as floods, air & water pollution, humanitarian crisis, coast & land erosion and a solid waste. By focusing on these aspects will help the researcher study the selected images from an interpretative paradigm and observe what are the characteristic, content and subject that be portrayed by photographers.

For the investigation, 15 photographs were chosen. Table 1 shows the environmental issues that were dealt with in them.

Tabla 1: The frequency of best environmental photography 2020

Photography Subject	Frequency (f)	Percentage (%)
Flood	2	13.0
Air & Water pollution	2	13.0
Humanitarian crisis	3	20.0
Coast & Land Erosion	3	20.0
Solid Waste	5	34.0
Source: owner elaboration		

RESULTS



Figure 1: Inferno by Amaan Ali, Yamuna Ghat, New Delhi, India.

Source: Nikon Environmental Winner 2020

Image 1 shows a boy fighting surface fires in a forest near his home. This image was taken in Yamuna Ghat, New Delhi, India. He may be seen struggling to put out the burning fire. It can also be seen that fire from the open burning actually is enormous and its hard to control. According to locals, forest fires caused by human activity in the area are a common occurrence due to adverse living conditions. Open burning has an enormous impact on environmental. According to Li et al. (2022) crop residue open burning has significant adverse effects on regional air quality, climate change, and human health. Outdoor open burning of materials and the use of outdoor heating devices cause or contribute to air pollution.

Crop residue open burning has decreased in recent years as a result of strict anti-burning policies implemented by government departments; however, many studies show that crop residue open burning emissions are still an important source of air pollution in the world, particularly during harvest season

Therefore, open burning should be banned in order for the government to develop or improve open burning regulations or systems that prioritize efficiency, pollution reduction and inclusiveness. The government has to utilise the benefits of communication technology to raise public awareness of environmental issues.



Figure 2: The Rising Tide Boy by Antonio Aragon Renuncio, Afiadeniyigba Beach, Ghana.

Source: Nikon Environmental Winner 2020

Image 2 shows a child sleep inside his house that destroyed by coastal erosion. This image was taken on Afiadeniyigba beach, Ghana. The child slept with only a sheet of cloth due to extreme heat. As a result of current global warming, the weather is extremely hot. The rising of sea level is one of the major factors. Sea levels in West-African countries continue to rise and thousands of people

have been forced to leave their homes. In recent years, sea level rise caused by global warming and its effects on coastal zones have piqued the scientific community's, as well as the media's and public's, interest.

Over the coming decades, the Intergovernmental Panel on Climate Change (IPCC) has identified sea level rise as a crucial issue facing the areas within the coastal regions in its fifth assessment report (Isiaka, 2013). The rising of sea levels caused by climate change poses a serious threat to countries with dense populations and economic activity, as well as coastal ecosystems

The impacts of sea-level rise have had some detrimental repercussions on the ecosystem, which appear to have impacted humanity lives. Whatever happens to this ecosystem will have a detrimental effect on the lives of humans and other different species. The community needs to be informed in order for them to properly understand the long-term effects of climate change.



Figure 3: Survive for Alive by Ashraful Islam, Naokhali, Bangladesh.

Source: Nikon Environmental Winner 2020

Image 3 shows a flock of sheep trying to search any grass that might be grow among the cracked soil that heavily impacted by the extreme drought through the season. This image was taken in Naokhali, Bangladesh. It can also be noticed that the cracked soil, which is extremely dry, makes life challenging for humans and animals.

According to Alam et al., (2021) drought has been a major issue in northern Bangladesh for many years. Extreme droughts in Bangladesh have created hardships for all living beings. When soil shrinks due to water loss caused

by prolonged periods of dry weather, cracks emerge. Clay soil is the most prone to fracture because it stores more water than other types of soil, allowing more room for cracks to form during a drought. This is among the impact of climate change that always related to the environmental issues. Drought's effects are exacerbated by poor health, poverty, and conflicts.

Drought's direct and indirect effects on human well-being are determined by the length and severity of the drought, the country's economic and social structure, and the availability of resources

Because of the various health effects connected with drought, comprehensive and proactive interventions focused on drought prevention and adaptation are required to reduce the risks associated with the drought issue.



Figura 4: Water Scarcity by Frederick Dharshie Wissah, Kakamega, Kenya. Source: Ciwem

Source: Nikon Environmental Winner 2020

Based on the image 4, a young boy drinking dirty water in an area affected by deforestation that might lead to the risking cholera, typhoid fever, dysentery and other water-born tropical diseases. This image was taken in Kakamega, Kenya. It can be seen that the child is trying to get water to drink. It shows that having a clean drinking water is very difficult for the society in Kenya, especially those who are living in the rural area.

Photographer are trying to show tropical forests have been vanishing over time due to irresponsible natural resource extraction, posing a danger to biodiversity protection, clean drinking water supply, and climatic stability. Other than that, the disposal of commercial waste into

local streams and rivers is a major cause of water pollution in Africa.

Poverty-stricken communities hardly have the resources to build efficient waste-management systems, often contaminate their water supplies instead. Deforestation activity is keep increasing and it led to the more consequences on environmental and become the major factor that contribute to the climat change. Furthermore, the consequences of deforestation for the downstream waterbodies such as reservoirs have been rarely addressed in central Europe. Reservoirs are highly valuable artificial infrastructures providing various ecological services to human, including drinking water resources, nutrient removal to downstream, and flood protection (Rinke et al., 2013)



Figura 5: "Hightide Enters Home" by SL Shanth Kumar, Mumbai, India.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 5 or "Hightide Enters Home" shows water from a big wave breaking into the Bandra shanty neighbourhood of Mumbai, India. A 40-year-old guy was dragged from his home and had to be saved by a neighbour. The rapid current made it impossible for the man to save himself. As can be observed, one of the implications of pollution is contaminated water.

According to Diez et al. (2011) flooding of coastal areas is today dramatically attributed to eustatic sea level rise caused by global climate change. In the mid to long term, the population potentially exposed to a 100-year coastal flood is expected to increase by around 20% in the case of a 0.15 m sea level raise compared to 2020 levels These issues need to be closely monitored by the experts in order to create the awareness among the society.

The reclaimed city of Mumbai is facing an increased risk of coastal flooding as a result of climate change. The city's land and sea temperatures have been rising, triggering a corresponding impact on sea levels. As climate change continues to contribute to rising sea levels and harsh weather, world is anticipated the flash flood to expand by 65% by the end of the century. Flooding, just like any natural catastrophes, is affected by a variety of conflicting elements that might influence its recurrence and intensity in opposite ways. Climate change, which is exacerbating excessive rainfall, is becoming an increasingly critical factor. This image displays how the photographer was able to highlight the crucial elements in the image that are capable of capturing the public's interest.



Figura 6: "Garbage Girl" by Amdad Hossain, Dhaka, Bangladesh.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 6 or "Garbage Girl" by Amdad Hossain portray the effect of climate change related to the solid waste produced by human. This image was taken in Dhaka, Bangladesh. It shows a woman falls asleep in a bunch of solid waste or plastic garbage. The image of a tired-looking woman sleeping in a rubbish dump. Chemically treated plastics can just leach the toxic and chemicals into the soil, which can subsequently leak into underground water or other nearby water sources, as well as the ecology.

This may result in a number of seriously dangerous impacts on the society that rely on the water as their drinking source. In recent decades, the problem of solid waste management has grown to frightening proportions in developing countries. The amount of solid trash produced has risen dramatically, and its properties have altered as a result of changes in people's lifestyles as a result of rapid urbanisation

According to Gupta & Verma (2021), solid waste produced by diverse human activities is another important contributor to climate change while also being harmed by it. Municipal solid garbage, commercial and industrial waste, construction and demolition (C&D) waste, agricultural waste, biomedical waste, electronic waste, and hazardous waste are all created.

Schubeler (1996) explaining that developing Asian countries confront significant challenges in controlling their solid waste. The annual waste creation rises in proportion to population and urbanisation, and disposal difficulties have gotten more difficult as more land is required for the final disposal of these solid wastes. Local governments should evaluate the public's interest and ability to engage in the planning and implementation of waste management awareness programmes in a transparent and courteous manner in order to invite the public to play their role to overcome this problem.



Figura 7: "Sweet Dreams" by Aragon Renuncio Antonio, Sahel, Burkina Faso.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 7 or "Sweet Dreams" is a photo taken by Aragon Renuncio Antonio in Burkina Faso. It portrays a girl sleep on a desk in her classroom during class rest due to the heavy storms in the Sahel, Burkina Faso that have risen in the last 35 years as a result of global warming. (Jafino et al., 2020), claims if no real climate and development action is taken by 2050, is one of the places where climate change is anticipated to force the most people into poverty (39.7 million).

Climate change has resulted in 70 incidents of heavy rain in the past decade, but the region also experiences severe droughts. Climate change has already had an impact on health in a broad range of ways, such as the increased

frequency of extreme weather events, which cause death and suffering. The population of fragile nations are far more vulnerable to climate change and natural disasters than those of other countries

Fragile african country affected by climate hazards confront a variety of issues, including physical and livelihood dangers for their populations. They rely primarily on agriculture, which is weather-dependent. Weak governance and wars also take a heavy toll on fragile governments, exacerbating their susceptibility to climate change. Extreme weather phenomena such as droughts and floods have the potential to harm developing nations in africa



Figura 8: "Underwater waste" by Sebnem Coskun, Istanbul, Turkey.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 8 known as "Underwater Waste" portrays Turkish world record-holder free diver Sahika Encumen participate in the bottom cleaning trash. It is clear that volunteers are working hard to clean the sea of the garbage produced by human activities. "Zero Waste Blue Project" is one of the projects led by Turkish Ministry of Environment and Urbanisation as part of the zero-waste blue initiative, the volunteer in the Bosphorus straits helped to cleaned underwater waste.

This man-made trash enters the water in a variety of ways and it's impacted the marine life and also the society. The majority of consumer items on the market today are made of some sort of plastic. Every year, almost 280 million tonnes of plastic materials are manufactured worldwide, with the majority of them ending up in landfills or the seas According to Tsydenova & Patil (2021), marine plastic

pollution breaks down into microplastics and contributes to climate change both through direct GHG emissions and indirectly by negatively affecting ocean organisms.

Although plastic is widely used and has already reached the furthest reaches of the ocean, including the deepest waters,⁴ the full extent of its influence on the sea remains unclear



Figura 9: "Tuvalu Benath the Rising Tide" by Sean Gallagher, Funafuti Lagoon, Tuvalu.

Source: Ciwem Environmental Photographer of the Yea, 2020

Image 9 or known as "Tuvalu Beneath the Rising Tide" is a photograph by Sean Gallagher shows a show the erosion of the shores of the beach. This image was taken in Funafuti Lagoon, Tuvalu. It can be seen that the waves from lagoon lap along fallen trees on a beach. These trees are supposed to provide protection for humans and animals; however, land erosion have turned these trees unusable as a source of protection for humans and animals. Land erosion has long been an issue for the south pacific nation, and it is becoming more severe as sea levels rise.

Land degradation is a process that happens when the pressure of water or wind detaches and removes topsoil, causing the land to degrade. The main threat of land erosion is the climate change. It is the process of soil loss at a cliff or riverbank caused by run-off (Amsalu et al., 2014). Land erosion may be caused by the biophysical environment, which includes soil, climate, topography, and ground cover. Natural and anthropogenic factors contribute to riverbank erosion.



Figura 10: "The Plastic Quarry" by Aragon Renuncio, Ouagadougou, Burkina Faso.

Source: Ciwem Environmental Photographer of the Year, 2020

In the Image 10, we can see a small boy playing with a plastic bag. Plastic is clearly a favourite of children in this region. The child's sorrowful expression might be owing to a shortage of activity facilities. Every year, around 380 million tons of plastic waste are manufactured worldwide. From 2.3 million tons in 1950 to 739 million tons by 2025, production increased at such an exponential rate. Plastics are a vital part of our daily life. Plastic production has benefitted society worldwide and in a wide range of industries, including manufacturing and food. Plastic production numbers have exceeded those of almost every other material. Da Costa et al. (2020) stated 9% of all plastic ever produced has been recycled, according to the report. The majority of plastic garbage winds up in landfills and, eventually, in the environment.



Figura 11: "Remains of the Forest" by J Henry Fair, Niederzier, Germany.

Source: Ciwem Environmental Photographer of the Year, 2020

In the image 11, it can be seen as a result of the power company's excavation of forest remnants. This corporation is digging into the forest in order to find the brown coal buried beneath the earth. This image was taken in Hambach Forest, Niederzier, Germany.

The vibrant stripes originate from a liquid remnant of the digging activity. These colourful pools of water may appear pleasant, but they are part of a tragic stories occurrence in the heart of Hambach Forest. When a power company purchased hambach forest to excavate for the brown coal lying beneath, it was approximately 12,000 years old. The ancient forest originally covered the whole island of Manhattan.

Nowdays only 10% remaining. Coal mining has a negative impact on the entire ecosystem. Unresting humanity requires a range of resources for daily life on the unstable earth (Goswami, 2015). According to Prasad et al., (2015) although many countries require reclamation plans for coal mining sites undoing all the environmental damages to water supplies, destroyed habitats and poor air quality is a long and problematic task.

During the energy generating process, coal emits a range of pollutants and discharges several harmful chemicals into the air, water, and land Energy is unquestionably crucial for all countries. However, initiatives have been initiated to improve the process of getting this energy source in order to prevent pollution of the environment. It is critical that everyone involved collaborate to find a solution.



Figura 12: "Daily Labour" by Yousof Tushar, Dhaka, Bangladesh.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 12 shows that man labours are carrying the coal on their head crossing the tiny bridge to the ship. The labours mainly those who are coming from Dhaka is a poor people that trying to survive in everyday life.

Every year, thousands of poor people migrate to the capital city of dhaka in search of job. many are compelled to perform difficult tasks, such as carrying coal on their heads. coal mining has a range of negative environmental effects, including soil erosion, habitat loss, global warming, and climate change. the coal mining industry affects health and environmental such as land usage, waste management, water and air pollution produced by coal mining



Figura 13: "Sewing Net" by Tran Tuan Viet, Phu Yen, Vietnam.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 13 with the title "Sewing Net" is a photo taken by Vietnamese photographer, Tran Tuan Viet shows a woman sewing a very massive green fishing net. This image was taken in the central province of Phu Yen, Vietnam. Fishing activity get more aggressive as fish numbers decline. destructive fishing using small-hole nets destroy the marine ecology.

This is resulted the overfishing and reduce the small fish population especially endangered species. According to the Clark (2019) one of the major consequences of industrial fishing is that some species have been overfished to the point of near extinction. Perhaps the best-known example of this comes from the atlantic cod.



Figura 14: "Flood" by Michele Lapini, Po Valley, Italy.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 14 with the title "Flood" is an image of a house submerged by the flooding of the Panaro River near Po Valley, Italy. This image was taken by Michele Lapini. The photos depict floods that are increasingly affecting the Po Valley territories, environmental erosion caused by quarry activities which destroyed millions of trees. The damaged condition of a house submerged by water reveals the flood's impact on human life.

These photographs represent the destructive power of nature as well as human flaws, as well as efforts to address the serious issue of climate change. Flooding of the River Panaro in the Po Valley caused by heavy rain and melting snow has swamped a home. Heavy rainfall in a short period of time can trigger flash floods, whereas heavy rainfall over several days might cause rivers or dams to overflow.

Extreme rainstorms in headwater catchments may trigger torrential and river floods, debris floods or debris flows (Borga et al., 2014)



Figura 15: "Clean Energy" by Pedro de Oliveira, Sierra de Sao Macario, Portugal.

Source: Ciwem Environmental Photographer of the Year, 2020

Image 15 shows a wind-energy turbines, moments before sun set over on a cloudy day. This image was taken by Pedro de Oliveira in Sierra de Sao Macario, Portugal. It can be seen that wind-energy turbines are very big compared to the trees in the background. Wind energy is considered a pillar of the low-carbon energy system of the future. Wind-energy turbines also contribute to the air pollution.

Air pollution is defined as pollution of the indoor or outdoor atmosphere by any chemical, physical, or biological factor that alters the natural environment.

An air pollutant is a chemical in the air that can be harmful to humans and the environment. These contaminants might be liquid droplets, solid particles, or gases. Other than that, wind-energy turbines also impacted the flying insect and individual rotors and wind farms on the flow field affect both mean flow and turbulent oscillations. Wind farms enhance the ground's effective surface roughness and redistribute mean flow.

Baidya et al. (2004) used the regional atmospheric modeling system (rams) to simulate the effects of a hypothetical wind farm in a region (in Oklahoma) which is rich in wind resources and is set to be exploited to its full potential. The simulations confirmed earlier findings that wind farms would significantly reduce wind speed (at the level of the turbine hub-height) and have a significant impact on the vertical distribution of temperature, humidity, surface sensible heat fluxes, and surface latent heat fluxes.

DISCUSSION

Following is some of the key results from interviews with informants about how photography might be used as a medium to raise awareness among audiences regarding environmental issues. The findings of this investigation revealed three major themes. This can be analyzed in three aspects: communication technology, technical aspect and knowledge.

Theme one: Communication technology

Communication technologies now have an effect on every aspect of human life. Because of advancements in communication technology, information may now be accessible through a plethora of media platforms. The majority of informants stated that as communication technology advances, photographers would be able to offer useful information about specific situations and events via online media channels such as social media.

The progress of communication technology has had a significant influence on increasing public knowledge of certain issues. Photography may be considered as a beneficial medium that can assist society in paying greater attention to environmental concerns. As stated in the following excerpts:

"Yes, as photographers, we must show to the public that we are among the best at conveying concerns to audiences, especially in this day and age... We just share it on social media, and others will see it." (Informants 2)

"Creating public awareness about environmental concerns is actually fairly straight forward. Because each photographer has their own social media account, simply upload and wait for response." (Informants 1)

"As a freelance photographer, I think that photography is key in educate society about any topic, not only environmental issues. We live in the twenty-first century; thus, it is simple for us to convey constructive photographic content and knowledge to audiences." (Informants 7)

"Photographers and technology can no longer be separated. Photo communication is highly significant and is the greatest tool for conveying information." (Informants 3)

Photographers today realize that photography and technology are inextricably connected. The availability of a variety of communication platforms must now be leveraged to transmit information and build public awareness about the importance of environmentalism and other challenges.

Theme two: Technical

Torabi and Sakol (2021) define composition in photography as an important element in the arrangement of images in photography and composition has various different elements used by each photographer to attract the audience's interest. As stated in the following excerpts:

"I believe that the word composition is vital. All photographers must embrace this technical component. Why do I think it is necessary? Because this composition element seems to be what permits the subject and issue, we want to portray to communicate with people..." (Informants 1)

"If the composition isn't correct, the image is just not going to be great, and if it isn't great, it won't be able to convey the narrative..." (Informants 2)

"As press photographers, we must use extreme caution when selecting compositions...because the composition is what distinguishes press concept of press photo from others" (Informants 7)

"Well, a photo is simply a visual that we created, therefore framing, cropping very important" (Informants 4)

Theme three: Knowledge

Knowledge has become a crucial and valued element. It is currently regarded as a factor that is steadily altering our personal, organization, and society (Wiig, 1993). Knowledge has become a crucial and valued element. It is currently regarded as a factor that is steadily altering our personal, organization, and society. Knowledge is consciousness, identification, and application for the advancement of humanity. It is formed in human minds and flourishes as individuals participate in its creation and distribution of any related visual.

"Knowledge is very important in producing any image" (Informants 2)

"Once you see it, you understand... but keep in mind that not everyone can grasp just looking at photos; they must study to understand" (Informants 4)

"Every photographer must understand the concept and idea to be communicated and how to produce a photograph that is simple to understand" (Informants 6)

Based on the findings, in creating a photograph that may communicate with the audience, photographers must learn how to create the message and integrate it in the images.

CONCLUSIONS

Overall, this study has proved the variables that photographers must consider while producing documentary photographic photos, particularly documentary photography that focusing on the environmental challenges. The study's findings indicate that the majority of the images focusing on the impact of environmental issues towards the society.

The photographs are viewed as having the ability to shape the audience's thoughts and beliefs about issues or events that occur. Photography is used to explain and clarify what is going on. We genuinely claim what we witness must be real and what we know is not true through storytelling. Aside from that, the study's findings reveal that the three primary themes discovered, mainly communication technology, technical skills, and knowledge are important elements in the construction of photographs that concentrate on the environment issues.

This is seen as significant because, in alongside the technical aspects of photography, communication technology may play a role in raising public awareness of environmental concerns. The knowledge element is also an important factor in expanding increasing awareness on problems. This study also concentrates on the subject of photographic images and of the The Best Environmental Photography 2020 which is floods, air & water pollution, Humanitarian crisis, coast & land erosion, and solid waste. It is critical for society to realize the effects of environmental issues on their life and how photography may be utilised as a tool in educating people and raising awareness about the issues.

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