

VIEWPOINT IN GLOBAL PUBLIC HEALTH

**An international award-winning photograph illustrates how graphics convey
climate change communication messages.**

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Abstract

Climate change effects are becoming extreme, persistent and permanent, with negative ramifications on agriculture, more extreme weather catastrophes, detrimental effects on human physical and mental health, destruction of small islands and while economic impacts are difficult to estimate overall the situation is apocalyptic. Policy action should address urgent issues, and consistency requires climate change understanding including knowledge of the human and environmental connections. Research showed that mass communication could be an important means to address environmental global warming. This paper shows that photographs can convey climate change communication messages. Public health committees and policymakers should utilise graphics on policy documents, websites and flyers to have dramatic influence over public opinion, to stimulate understanding and collective action.

KEY WORDS: Climate change; environment; photography; mass communication.

Riassunto

Gli effetti del cambiamento climatico stanno diventando estremi, persistenti e permanenti, con negative ramificazioni sull'agricoltura, con estremi catastrofi atmosferiche, effetti detrimental

sulla salute umana fisica e mentale, distruzione di piccole isole, e mentre l'impatto economico è difficile da stimare la situazione è nel complesso apocalittica. L'azione politica dovrebbe affrontare questioni urgenti, e la coerenza richiede la comprensione dei cambiamenti climatici inclusa la conoscenza delle connessioni tra uomo ed ambiente. La ricerca ha dimostrato che la comunicazione di massa potrebbe essere un mezzo importante per affrontare il riscaldamento ambientale globale. Questa pubblicazione evidenzia come le fotografie possono veicolare messaggi di comunicazione sui cambiamenti climatici. I comitati di salute pubblica ed i decisori politici dovrebbero utilizzare le immagini sui documenti politici, i siti web e le locandine per influenzare in modo importante l'opinione pubblica e stimolare la comprensione e l'azione collettiva.

TAKE-HOME MESSAGE: Public health committees and policymakers should utilise graphics on policy documents, websites and flyers to have dramatic influence over public opinion, and to stimulate understanding and collective action to address climate change and other global health challenges.

Competing interests: none declared

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INTRODUCTION

Climate change is causing severe current and expected future negative effects, effects that are becoming persistent and permanent, and these should be considered in combination, not isolation and when considered as such are more severe and in fact the situation is apocalyptic [1-4]. The 2030 Agenda for Sustainable Development has seventeen goals with specific targets ($n = 169$) and indicators ($n = 230$) and there is integration of the economic, social, and environmental dimensions [5]. The direct effects include more injuries to people resulting from more severe or frequent weather events such as heat waves and storms. Secondary, indirect effects from ecosystem changes have impact on the range and timing of infectious diseases [6]. There are inextricable interlinkages between the sustainable developmental goals (SDGs) such that climate change can effect temperature, rainfall, desertification, land degradation, resource conservation, biodiversity and ecology, which can have a detrimental impact on food security, agricultural output, sustainable production and consumption, access to water and sanitation and modern energy [4]. The Intergovernmental Panel on Climate Change (IPCC), report an increase of 1.5-2°C is catastrophic and significant for sea level rise, loss of biodiversity and ecosystem destruction, (e.g., species loss, extinction), ocean temperature and acidity changes, disruptions to food and water availability, community health (e.g., impacts of heat on health, occupational diseases, mental health), and financial instability [7-9]. Climate change, furthermore, can affect occupational health of workers in both indoor and outdoor workplaces [9, 10]. Within Australia these effects are predicted to cause declines in food production challenged by changing rainfall, reduced growing times and increased land disintegration [8]. Global population displacement can result in legitimate humanitarian issues being health and social impacts of forced migration [2].

The requirement for emission reductions provides an opportunity to create a more equitable, environmentally sustainable society with greater diversity and hence one that is healthier overall [11]. The development of the SDGs incorporates the interconnectedness of all the issues and in order to reach the SDGs the climate change convention Paris agreement is committed to keeping global warming $< 1.5-2^{\circ}\text{C}$ with scientists indicating this agreement is the last chance to prevent excessive temperature rises [5, 12, 13]. Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are higher than previously recorded. Climate changes have widespread impacts on human and natural systems [14]. The Public Health Association of Australia prepares reports and documents changes associated with global warming and its sequelae which include discussion on sea level rise, climate change and the ecosystem, biological and physical repercussions along with economic and social disruption that may also occur [6]. The policy documents and agreement mentioned address urgent policy issues that extend worldwide globally [15, 16]. In fact, the Lancet commission in 2009 stated that ‘climate change is the biggest global threat of the 21st century’ [17]. All of these documents and reports mentioned above provide a textual basis for understanding the important and fundamental effects, predictions and documented outcomes that are a result of tree logging, environmental degradation and loss of biodiversity. The aim of this paper is to indicate how mass communication and graphics could be an important means to stimulate public health debates against environmental global warming. In this viewpoint, some magnificent photographic images are shown, one image of which has won a photographic competition and it conveys the beauty of nature and our surrounds that we must protect.

DISCUSSION

Mr Stephen Hilton is an established amateur photographer having had nine gallery exhibitions within Australia that the author has organised [18]. In addition, he has received awards and won competitions. In 2019, the Asia Pacific Academic Consortium for Public Health (APACPH) photographic competition in Thailand was organised by the early career network [19]. Hilton's photographs were entered. The conference was hosted by the Faculty of Public Health, Mahidol University as it was their 72nd founding Anniversary. The theme was based around the United Nation's SDGs in reality so the aim was to share public health knowledge related to sustainable development in the present and how to reach the goals by 2030. This is due to the fact that His Royal Highness Prince Mahidol of Songkla's philosophy and the late King Bhumibol's sufficient economy are in concordance with these goals. One of the photographs by Stephen Hilton showing a magnificent tree picture was entered under the SDG category of environmental health (Figure 1). The tree had multicoloured leaves; green, orange, brown and yellow with summer and autumn variations, with leaves glistening as the water reflection below the tree shines on the leaves highlighting and illuminating the colours. I had the honour to write the accompanying paragraph; 'Climate change, deforestation, tree logging, global warming, concrete monstrosities, either roads, buildings or car parks, causes loss of the forest, butterflies, and the wildlife that inhabit there. This tree with green and autumn leaves, with lovely reflections highlights the beauty of nature that we must protect. Don't destroy our environment'. Eventually, this tree photograph won the competition.

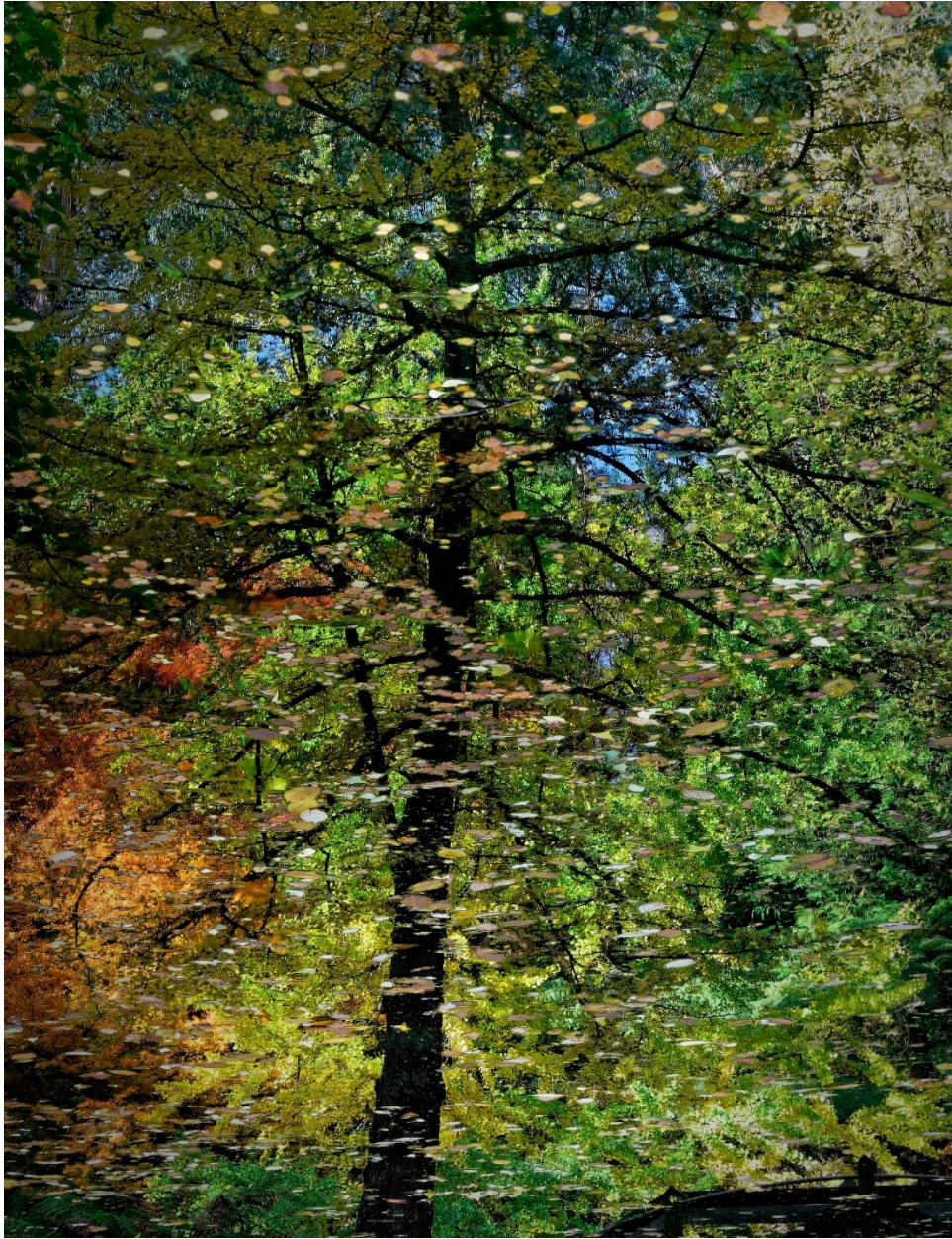


Figure 1. The award-winning ‘Tree’ photograph at the Asia Pacific Academic Consortium for Public Health (APACPH) photographic competition (by kind permission of Mr Stephen Hilton).

A 2nd photograph taken by Stephen Hilton was an image of lemons and was entered under the category of the SDG of nutrition. Deborah Hilton wrote a paragraph on how if you don't like

eating fruit and vegetables turn lemons into lemonade to make it more palatable. More specifically this reads; “This image pictures fruit, namely lemons. Many people don’t currently meet the recommended daily nutritional guidelines for fruit intake. If you don’t like fruit, use your imagination. Turn lemons into lemonade and then it is delicious and easily digestible. Life’s motto, if life throws you lemons, make lemonade [be creative]”.



Figure 2. The ‘Lemon’ photograph at the Asia Pacific Academic Consortium for Public Health

(APACPH) photographic competition (by kind permission of Mr Stephen Hilton).

Conveying the right scientific information to the public is important. Mass information delivery to the public is essential for any global health threats and there is evidence that mass information influences a person's health decisions [20-23], and in terms of climate change it has a positive contribution to understanding if the focus is on environmental global warming [24]. Aside from knowledge advancement, practical programs implementing change are also essential. The United Nations Economic Commission for Europe 'Trees in Cities Challenge', is a program whereby mayors were invited to undertake a challenge to pledge to plant a pre-determined number of trees in their city [25]. The effects include climate change mitigation, as a result of absorbing CO₂ and hence allowing air cooling, with the trees helping to mitigate climate change. There became a need for less air conditioning, so hence there were resultant energy savings. The human health benefits from trees include beneficial effects on the respiratory system as a result of cleaner air and environmental conditions. Trees exchange gases with the atmosphere, capturing particulate matter and urban pollutants. Air pollutant exposure has been shown to have detrimental effects in terms of increasing disease prevalence of heart disease, stroke, lung cancer, low birth weight and type two diabetes in addition to contributing to a rise in all-cause mortality [8]. Trees have also been shown to have benefit as a result of increasing social cohesion and building stronger communities [25]. Having healthy leafy surrounds whereby people can meet, gather, walk, run and exercise has beneficial effects on physical health and mental wellbeing for the prevention of diseases such as obesity, for accelerating recovery from diseases and decreasing levels of stress. Biodiversity is increased as trees give shelter to animals and plants.

While having textual information is necessary for policy makers, politicians, community

members and others, it should be remembered that images have powerful meaning and impact. The modern use of the phrase; 'A picture is worth a thousand words' is generally attributed to Fred R. Barnard [26]. An ad by Barnard appeared in 1927 and the phrase used was "One Picture Worth Ten Thousand Words", and here it was labelled a Chinese proverb. Nonetheless, after this the proverb soon was attributed to Confucius. Artists have also used this phrase. Leonardo da Vinci states that a poet would be 'overcome by sleep and hunger before being able to describe with words what a painter is able to depict in an instant' [26]. Various community groups, individuals and organisations may relate more so to an image that is depicting a message. Without copious pages of text, a single page containing an impressive persuasive graphical image can have immediate far reaching impact far beyond that imaginable with text. In an instant the idea is conveyed to the viewer. Photographs convey ideas and information in the visual arena and may reach masses of people quickly and efficiently with impact. This is not to say that text and documents with data, information, recordings, predictions, tables, figures and calculations are not important. They are equally so and people and organisations will argue over the importance or value of text compared to graphics as opinions vary. As a closing thought, remember the spoof on the phrase 'a picture is worth a thousand words' [26]. The spoof is attributed to computer scientist John McCarthy, and it is 'as the Chinese say, 1001 words is worth more than a picture'.

CONCLUSION

Public health committees and policy makers should utilise photographs on policy documents, websites and flyers to have dramatic influence over opinions, understanding and collective action.

In conclusion, it therefore seems reasonable and obvious to state that both text and pictures are important and should work together in unison and harmony to create knowledge, promote learning, increase wisdom, facilitate change and movement within society for the better good of countries and individual livelihood. This strategy could be useful to address climate change and other global health challenges.

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