

## Climate Change Health WA Inquiry:

Submission by: Echo Credits.

Date: 14/08/2019.

Dear Sir / Madam:

Below is my submission, in regards to the, Climate Change Health WA Inquiry -2019. I will address the below terms of reference in this submission: Establish current knowledge on the implications of climate change for health in Western Australia (WA) and recommend a framework for evaluating future implications. Identify and recommend a program of work to manage the implications of climate change for health in WA, which will protect the public from the harmful health impacts of climate change. Reduce the contribution of WA health services to climate change and other detrimental impacts. Evaluate the likely benefits (health and wellbeing, social and economic) arising from climate change mitigation strategies, with a focus on WA health services. Recommend the terms of reference, scope and preferred methods for, undertaking a climate change vulnerability assessment for the health sector and developing a Climate Change Adaptation Plan for the health sector. First of then, in regards to, establishing current knowledge on the implications of climate change for health in Western Australia (WA) and recommend a framework for evaluating future implications; In-fact the future scenario, for West Australia, in regards to anthropocentric climate change processes; "Is an expected average temperature increases of 0.50C to 20C. Increases in the number of days over 35.C in - *South West* of +1 to + 20 days (now 27 in Perth) - *North West* of +10 to +90 days (now 54 in Broome and 156 in Halls Creek). Rainfall changes in *South-West* of 2 to 20% reduction in annual rainfall with a 17% reduction in winter rain days and catchment runoff decreases of 5 to 40% *North-West* of annual rainfall decreases of 1.5 to 3.5%. Sea-Level increases of 3 to 17 cm by 2030 and 25 to 75 cm by 2100. For Extreme Weather Events the following are generally accepted. Heatwaves – more per year. Droughts – more frequent and severe. Bushfires – increased risk. Flooding – increased intensity. Storms – increased intensity. Tropical Cyclones – increased intensity." p.8 (Katscherian, Spickett, 2012, p.8). Thus the impact of these anthropocentric climate change processes upon health of individuals in West Australia will be; "An increased risk of bushfire and drought, decreased average rainfall in south-west Western Australia, less fresh water, increased heat stress-related mortality and morbidity, particularly among the young and elderly, decreased agricultural production, potentially, increasing the costs of both food and water and changing population distribution in regional areas , thus increasing mental health issues, etc. Climate change is likely to have adverse impacts on the health and wellbeing of Western Australians. Heat related deaths per ca-pita are expected to rise due to the increasing frequency of summer day temperatures over 40oC and incidences of food, water and vector-borne diseases (such as Ross River virus) may also increase." pp.7-8. (West Australian Government, 2008, pp.7-8). In fact, according to Doctors for the Environment Australia, the major individuals who will most vulnerable to present and future anthropocentric climate change scenarios will be." Children, as they have immature immune systems, putting them at increased risk of infections, and are more susceptible to heat stress and dehydration. In addition, their rapid growth and development means harmful exposures in childhood may have severe long-term effects. Elderly people and those with pre-existing medical conditions are more prone to dehydration, heat stress and exacerbation of heart and lung disease, particularly when routine health services are disrupted by extreme events such as heatwaves and bushfires. Pregnant women are at increased risk of heat stress during heatwaves due to the physiological demands of pregnancy, and hot weather during pregnancy increases the risk of babies being underweight at birth. People living in rural and remote areas, and Aboriginal and Torres Strait Islander people are also at increased risk, in part due to their higher levels of

underlying disease and limited access to health care services.” pp.1-4. (Doctors for the Environment Australia, 2016, pp.1-4). The West Australian Government, in a 2008 report, titled - Climate Change and Health Impact Assessment – Adaption Strategies for West Australia, recommend a framework for evaluating future implications in regards to health of west Australians, which is a realistic and good present framework for evaluating future implications of climate change effects upon the health of west Australian citizens. “ In it recommend, identifying areas of the State and communities that are vulnerable to climate change impacts, and developing integrated adaptation strategies to address public health, sport and recreation and emergency management, supporting research into climate and health impacts, promoting public health training, monitoring and management of pests and diseases, implementing behaviour change and urban development initiatives that reduce emissions and waste, promote recycling, reduce energy and water consumption, and provide health and wellbeing benefits, ensuring that early warning and management systems for severe weather events (including cyclones and bushfires) and high quality prevention and control programs adequately address increasing risks from climate change impacts, and developing training and skills development programs for local government and community emergency management groups to incorporate climate change considerations into local disaster management plans.” pp.11-59. (West Australian Government, 2008, pp.11-59). I would also suggest to use a similar framework for evaluating future implications in regards to anthropocentric climate change and health, as has been suggested by the authors; Spickett, Brown and Katscherian, in their 2010 - Adaptation strategies for health impacts of climate change in Western Australia Applications of a Health Impact Assessment framework research paper. (Spickett, Brown, Katscherian, 2011, pp.297–300). Were it recommend, that a High Impact assessment framework process can be used to evaluating future implications in regards to anthropocentric climate change and health. Whereby;” A Health Impact Assessment (HIA) is a tool which has been developed to consider the potential health issues using established mechanisms which demonstrate factors that could affect health during the planning stages of proposed developments. HIA aims to identify and examine both the positive and negative health impacts of activities and provide decision makers with information about how the activity may affect the health of people. The HIA framework follows the format of: Screening, Scoping, Profiling, Risk assessment, Risk management, Decision making and Evaluation.” p.299 (Ibid, p.299). It must also be noted” that a HIA is dependent on participation by people from a wide range of government and non-government sectors and the public because the activities of each of these sectors impact on health.” p. 299. (Ibid, p.299).

Secondly, and very importantly within the context, of this submission, I will identify and recommend a program, (a physical activity behaviour change program called - *Physical Activity Transaction (PAT) processes*), to manage the implications of climate change for health in WA, which will, protect the public from the harmful health impacts of climate change. However, 1<sup>st</sup> off, I should mention that the Living Smart Households framework program, which is a Western Australian Government good healthy behaviour change program.” Which reduces energy, water and car travel and achieves positive environmental outcomes by providing localised information, feedback and interactive Eco Coaching conversations and events. Reducing energy use (both stationary and transport) means greenhouse gas emissions are lowered by around one tonne per household per year. Reduced water consumption allows households to respond to a changing climate where water is increasingly scarce. Switching car trips to public transport, cycling or walking reduces traffic congestion and pollution, increases levels of physical activity.” pp.11-59. (West Australian Government, 2008, pp.11-49). Thus, following on from the above-mentioned behaviour change process, of endeavouring to get individuals, to do more cycling and walking to reduce traffic congestion / pollution, and increase levels of physical activity. I would suggest that a Physical Activity Transaction (PAT) process, maybe a good behaviour change process, of endeavouring to get individuals, to do more cycling and walking to reduce traffic congestion /

pollution, and increase levels of physical activity (Evans, 2019, “Physical Activity Transaction Report,” pp.1-20). A Physical Activity Transaction (PAT) process, may also manage the implications of climate change for health in WA, and may protect the public from the harmful health impacts of climate change. So what then is a Physical Activity Transaction (PAT) process: ”A Physical Activity Transaction (PAT) process, links physical activity behaviours within a sustainable consumption strategy. It encourages individuals to do some form of physical activity, by allocating points or codes, for their physical activity actions. So that they can then exchange/transact these points/codes, for some form of reward within a business/community context.” pp.1-9 (Ibid, pp. 1-9) (Evans, 2019, “Physical Activity Transaction Report,” pp.1-20). How then can a Physical Activity Transaction (PAT) process, manage the implications of climate change for health in WA, which will, protect the public from the harmful health impacts of climate change. A Physical Activity Transaction (PAT) process, may benefit individuals, communities and health / sustainability concepts. For instance, research has shown that any outdoor activities, are inclined to alleviate depressive symptoms and boost morale, etc. (Korpela, Stenga, Jussila1, 2016, pp. 8-15). While A Physical Activity Transaction (PAT) process, I feel, can also be a formidable strategy to mitigate, adapt and defeat, anthropocentric climate change processes within West Australia, etc. (Evans, 2019, “Physical Activity Transaction Presentation – Power Point Presentation.”1-9, pp).



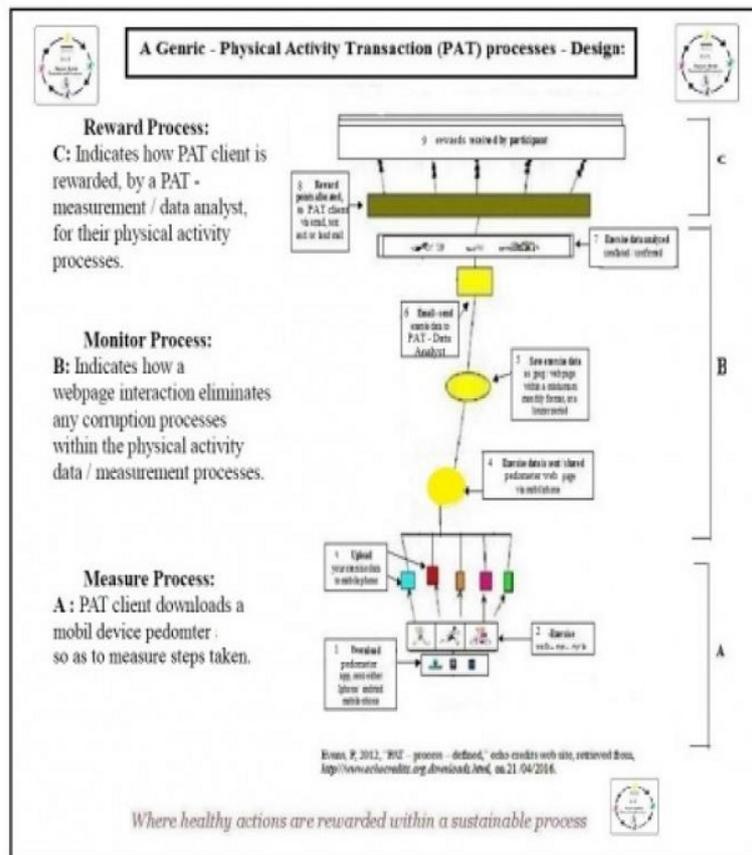
**A Generic - Physical Activity Transaction (PAT) processes - Design:**



**Reward Process:**  
**C:** Indicates how PAT client is rewarded, by a PAT - measurement / data analyst, for their physical activity processes.

**Monitor Process:**  
**B:** Indicates how pedometer / webpage interactions eliminates any corruption processes within the physical activity data / measurement processes.

**Measure Process:**  
**A :** PAT client downloads Any generic mobil device pedometer application, so as to measure steps taken:



Evans,2019, “Physical Activity Transaction Presentation – Power Point Presentation, p.4

**Above:** A generic Physical Activity Transaction (PAT) process -Design:

Indeed, it's possible that with the above Physical Activity Transaction (PAT) process program, that I have recommended, it is hopefully, a good program, that can protect the public from the harmful health effects of climate change and possibly, reduce the contribution of WA health services due to climate change scenarios and other detrimental impacts. As a Physical Activity Transaction (PAT) process, can be used by any individual, business, or doctor, etc, to increase / enhance, *the resilience, of an individual and community's health processes*, so that they may be able to mitigate, adapt and defeat any anthropocentric climate change scenarios, within west Australasia, etc. (Evans, 2019, "Physical Activity Transaction Presentation – Power Point Presentation. 1-9, pp). While at the same time a Physical Activity Transaction (PAT) process program, may possibly, reduce the contribution of WA health services due to climate change scenarios and other detrimental impacts. Because as any individual, business, or doctor, etc, can use a Physical Activity Transaction (PAT) process, to increase / enhance, *the resilience, of an individual and community's health processes*, this in turn, I am sure, will reduce the contribution of WA health services, due to climate change scenarios and other detrimental impacts. Due to the fact that, if individuals and community's health processes, are more prone to be resilient to anthropocentric climate change scenarios, within west Australasia, then it is realistic to assume that the continual engagement of WA health services, due to climate change scenarios and other detrimental impacts, will be reduced as well. (*More research, is probably necessary here, I would suggest...?*)

Thirdly it is possible, that with West Australian society, possibly engaging the above Physical Activity Transaction (PAT) process program I have mentioned, it may also be possible to, evaluate the likely benefits (health and wellbeing, social and economic) arising from climate change mitigation strategies, with a focus on WA health services. A Physical Activity Transaction (PAT) process strategy has economic climate change mitigation strategies, with a focus on WA health services. In that it is a economical / human behaviour - sustainable consumption design, like a (PAT) process, and is orientated towards, consumers spending their physical activity point rewards, on environmentally friendly / sustainable products, such as on fair trade, organic products and green ethical investments, etc. (Ibid, pp. 1-9) (Evans, 2019, "Can Australian sustainable Consumption Eliminate Climate Change," pp.1-5). Indeed also, as a community, maybe we should have better sustainable and environmental harm labelling, upon specific foods and products, etc, so that consumers are well informed, of good health benefits and sustainable practices, of specific foods and products. Which in turn, are healthy for individuals and sustainable, for our planet Earth, while at the same time, can give both food and product consumers, an insight, as to what food / products, etc are best at alleviating anthropocentric climate change scenarios. (Pipher, 1995, pp.118-120) (Evans, 2019, "Obesity and Health – Essay". 1-9). A Physical Activity Transaction (PAT) process strategy has well-being processes in mind, in regards climate change mitigation strategies, with a focus on WA health services. In that it is creates less dependence upon fossil fuel transport processes and in turn, elimination of anthropocentric climate change scenarios. A Physical Activity Transaction (PAT) process strategy, can enhance a sense of place, of a specific area and thus in-turn, engage individuals, with pro environmental behaviour. Such as litter reduction and recycling etc. This in turn will enhance a sense of wellbeing in the community and can also create healthy / balanced mental health concepts, in that individuals engaging in pro environment behaviours, will feel that they are engaged, useful and contributing to a community, etc (Evans,2019, "Physical Activity Transaction Presentation – Power Point Presentation". 1-9). A Physical Activity Transaction (PAT) process strategy has social and health concepts in mind, in regards to climate change mitigation strategies, with a focus on WA health services. In that it can create individual and community, health / social sustainability concepts. For instance, research has shown that any outdoor activities, are inclined to alleviate depressive symptoms and boost morale, while also creating social cohesion within communities, etc. (Korpela, Stenga, Jussila1, 2016, pp. 8-15). Businesses can engage its employees in physical activities, via PAT like consumption processes. As

a result, it's possible, more production is done, thus ensuring sustainability / resilience of business's, in regards to coping with anthropocentric climate change scenarios (Ricci, Chee, 2005, pp.1227 - 1234). A Physical Activity Transaction (PAT) process, can possibly create social cohesion in communities, in regards to reduction in crime, due to individuals engaged in neighbourhood, outdoor physical activities. As Individuals are out and about, in local neighbourhoods, etc, thus they are attuned to any crime events, which maybe caused, by climate change scenarios. Such as, storms, flooding, extreme weather event - disasters, etc. (Evans,2019, "Physical Activity Transaction Presentation – Power Point Presentation. "pp.1-9) (Kollmuss, Agyeman, 2002, pp.239 - 260).

Its also possible to recommend the terms of reference, scope and preferred methods, in undertaking a climate change vulnerability assessment for the health sector, and developing a Climate Change Adaptation Plan for the health sector, within the context of the recommend a program of mitigation and adaptation processes, that I have mentioned above, to manage the implications of climate change for health in West Australia, in that a Physical Activity Transaction (PAT) process / strategy, can implement climate change vulnerability assessment concepts, for the health sectors, etc. By introducing a Physical Activity Transaction (PAT) process - *PAT - Data Information, (PAT - DI), process*, as a measurement tool / indicator of individuals and communities etc, vulnerability to anthropocentric climate change scenarios. Whereby a *(PAT - DI), process*, can be used as a measurement tool / indicator, in regards obesity and health / well-being information / concepts. For instance, *(PAT - DI), process*, can help inform health agents, insurance companies, mental health practitioners and doctors, etc., of obesity levels and overall health levels, of either individuals or communities (Evans,2019, "Physical Activity Transaction Presentation – Power Point Presentation. "pp.1-9). A *(PAT - DI), process*, can also be a measurement tool / indicator to inform of pro environmental behaviours and climate change, reduction information / activities, etc. For example, *(PAT – DI) process*, can inform local planners, where to plan for priority pedestrian sidewalks, cycle-paths etc., in communities. While also informing consumer research analyst's and government agencies, etc., where / which, sustainable products, are benefiting a reduction in anthropocentric climate change scenarios, etc. (Ibid, pp. 1-9).

In fact, a lot of what I have mentioned in the above terms of reference, in this my submission process, may hopefully, go some way in helping a West Australian community, etc attitude and thought processes, to be changed towards, how it's possible to both mitigate and adapt to Climate change health scenarios. Indeed, maybe as a society, we have to investigate / debate other options, as to what we have learnt within a / the current western worldview paradigm. Such as not focusing so much on, an individualistic materialistic culture thought process, but more of focus upon a collective sustainable, health orientated, community thought process (Evans, 2019, "The Ethical Adventures of Climate Change – Essay." pp. 1-10). Such a process is obvious, in the words of the Historian; Gregg Braden. "The key to addressing the economic, environmental and health crisis, which is threatening our very survival, as a human species on planet Earth. Lies more in building partnerships, based upon mutual aid and cooperation. So that we can mitigate and adapt to changes, rather that pointing fingers and assigning blame to others, etc, as this only makes mutual alliances and good, healthy, sustainable change processes, very difficult processes. "p.91 (Braden,2011, p.91). Indeed, I would tend to agree with the authors, Spickett, Brown and Katscherian, when they suggest, given the potential die-consequences of anthropocentric climate change, in West Australia, and its impact upon the health of ALL species, human and non-human. Uncertainty, should not and never be, a justification for any sort of inaction against, endeavouring to mitigate, adapt and defeat, anthropocentric climate change processes, within West Australia, etc. (Spickett, Brown, Katscherian, 2010, p.299).

Thank you for your time, I hope my submission has been of some benefit for the West Australian, Climate Change - Health Inquiry - 2019.

Yours Sincerely: Peter Evans: (*Executive Director – Echo Credits*)

**Submission Done By:**

Echo Credits:

Peter Evans (*Executive Director*)

PH- 0437151615

Web: <http://www.echocredits.org/>

**References:**

Braden, G,2011, *Deep Truth*, Hay House pub, London, England.

Doctors for the Environment Australia, 2016,” Climate Change and Health in Australia– Fact Sheet,” pp.1-4, retrieved from,[www.dea.org.au/html](http://www.dea.org.au/html), on 12/06/2019.

Evans, P, 2019, “Obesity and Health – Essay.” pp. 1-9, retrieved from, <http://www.echocredits.org/download.html>, on 12/04/2019.

Evans, P, 2019, “Can Australian sustainable Consumption Eliminate Climate Change,” pp.1-5, retrieved from, <http://www.echocredits.org/download.html>, on 12/04/2019.

Evans, P, 2019, “Physical Activity Transaction Report,” pp.1-20, retrieved from, <http://www.echocredits.org/download.html>, on 12/04/2019.

Evans, P, 2019, “Physical Activity Transaction Presentation – Power Point Presentation,” pp. 1-9, retrieved from, <http://www.echocredits.org/download.html>, on 12/04/2019.

Evans, P, 2019, “The Ethical Adventures of Climate Change - Essay,” pp. 1-12, retrieved from, <http://www.echocredits.org/download.html>, on 12/04/2019.

Katscherian, D, Spickett, J, 2012, “Climate Change and Health Impact Assessment – Power- Point Slide, “pp.1-27, School of Public Health Curtin University, Department of Health WA, -pub, retrieved from, [www.public.health.wa.gov.au/html](http://www.public.health.wa.gov.au/html), on 12/04/2019.

Kollmuss,A, Agyeman,J, 2002,” Mind the Gap: why do people act environmentally and what are the barriers to pro-environmental behaviour?.pp.239 - 260, Environmental Education Research Journal, Vol - 8, N- 3, 2002, pp.239 - 260, Tufts University, Medford, America, Carfax Pub, America, retrieved from, [https://www.researchgate.net/publication/235363126\\_Mind\\_the\\_Gap\\_Why\\_Do\\_People\\_Act\\_Environmentally\\_and\\_What\\_Are\\_the\\_Barriers\\_to\\_Pro-Environmental\\_Behavior.html](https://www.researchgate.net/publication/235363126_Mind_the_Gap_Why_Do_People_Act_Environmentally_and_What_Are_the_Barriers_to_Pro-Environmental_Behavior.html), on 12/03/2019.

Korpela, K, M, Stenga, E, Jussila, P, 2016, “Nature Walks as a Part of Therapeutic Intervention for Depression,” pp. 8-15, Eco Psychology Journal, Vol - 8, N -1, March – 2016, Mary Ann Liebert pub, retrieved from, <http://www.ecopsychologyjournal/DOI:10.1089/eco.2015.0070.html>, on 22/03/2016.

Pipher, M, 1995, *Hunger Pains – The Modern Woman's Tragic Quest for Thinness*, Ballantine Books pub, New York, America.

Ricci, J, A, Chee, E, 2005, "Lost Productive Time Associated with Excess Weight in the U.S. Workforce," pp.1227 -1234, Joem Journal, Vol - 47, N - 12, Dec - 2005, American College of Occupational and Environmental Medicine pub, New York, retrieved from, <http://www.acoem.org/DOI:10.1097/01.jom.0000184871.20901.c3.html>, on 12/02/2016.

Spicket, J, T, Brown, H, L, Katscherian, D, 2011," Adaption Strategies for Health Impacts of Climate Change in West Australia – Application of Health Impact Assessment Framework,"pp.297-300, Environmental Impact Assessment review Journal, Vol - 31, 2011, pp.297-300, Elsevier pub, London, England, retrieved from,<https://www.sciencedirect.com/science/article/abs/pii/S0195925510000910.html>,on 14/03/2019.

West Australian Government, 2008, "Climate Change and Health Impact Assessment – Adaption Strategies for West Australia,"pp.1-77, West Australian Government – Environmental Health Department pub, Perth, Australia, retrieved from,[https://ww2.health.wa.gov.au/~/\\_media/Files/Corporate/general%20documents/Environmental%20health/Climate%20change/Health-impacts-of-climate-change.pdf](https://ww2.health.wa.gov.au/~/_media/Files/Corporate/general%20documents/Environmental%20health/Climate%20change/Health-impacts-of-climate-change.pdf).html,on 12/05/2019.