Keynote Speaker from

Laguna Lodge Eco-Resort & Nature Reserve

at the

Global-Eco Asia Pacific Tourism Conference

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Good morning, I'm Jeffro, the co-owner of Laguna Lodge Eco-Resort & Nature Reserve which is in Guatemala, Central America, just below Mexico. I have just flown over from my adopted home, Guatemala to be here today, along with my partner Mayah from New Zealand. First of all, thanks to Tony Charters for inviting us to speak here, we met in April this year in Madrid at the World Travel & Tourism Councils conference as Laguna Lodge was nominated for the Tourism for Tomorrow's Environment award, I am really glad to have this opportunity to visit Australia again, and especially to come back to this unique island, the last time I saw the quokkas I was 5 years old!

We are really pleased to be able to share our best practice and ecological initiatives with you all today. To respect and protect assets of nature and culture Laguna Lodge has a firm commitment to sustainable management. Sustainable tourism with effective environmental policy and socially responsible business practices supports biodiversity conservation and benefits our local community.

The Laguna Lodge is on the lakeshore of Lake Atitlan, a volcano rimmed crater lake which is situated in the Mayan highlands on its own 40 hectare nature reserve. Access to our lodge is only by boat. Since the inception of the lodge we have used sustainable, ecological, environmental and social principles. We provide a luxurious intimate and authentic eco-lodge with a firm commitment to effective environmental policy and are dedicated to sustainable management. The lodge was constructed by local indigenous with native techniques and sunbaked adobe bricks made on site. The Mayans are master rock masons and we have used these skills throughout construction. The lodge displays antiquities approved artifacts found during construction or from the lake area. 3.Our inspiration was Guatemala's natural beauty and the good character and work ethic of the Maya Kaqchikel. Most staff had little formal schooling and understanding of tourism and language was a barrier as Spanish is the Kaqchikel tribe's second language and rarely spoken. We overcame this with practical Spanish and adding English lessons. Kaqchikel employees built the lodge sharing local techniques which needed to be carefully merged with engineering for building on a larger scale. Due to high escarpments, building on the side of a mountain and with no solar contractors in Guatemala the installation of the solar electric systems were labor intensive and challenging and still are. As we have no roads in our area bringing everything in by small boat required skill.

We are small boutique lodge in a remote location with a BIG idea. We have stood firm with our eco-initiative that animal sourced foods are a significant contributor to global warming and climate change. We saw an opportunity to implement this effective and largely unknown sustainable initiative by offering meat-free and plant based cuisine, which was either going to make or break us! However, our unique mitigation strategy has been a great point of interest for journalists, among many publications Laguna Lodge has been featured

in Time Magazine and included in the World's Best 25 lodges in National Geographic Travel Magazine where they both wrote about our plant based cuisine.

Meat-free menus are offered as our primary and only menu, breaking taboo that meat including fish must be part of a successful hotel model. By providing healthy flavorful and satisfying menus, we do not need to choose between profits and ethics, sustainability also includes our food choices.

We strive to be leaders within sustainable luxury eco-tourism and to benefit the local Mayan community and economy. We have always tried to create a sense of place and cultural authenticity, including protection of archaeological sites, support for indigenous traditions and artistic heritage. We employ 100% Kaqchikel Mayan staff and to promote gender equality and empower women, more than 60% are woman and top management are all women. We encourage the use of traditional hand-woven clothing and the use of native language between the staff.

Laguna Community Care is funded by the lodge and by guests wishing to donate in a professional capacity, monetarily or with donated items. LCC is not a nonprofit or foundation so we do not receive salaries or financial benefits of any kind. All funds donated are used directly for care and go a long way. Skilled professionals donate or reduce rates for appointments and treatments. We donate stays at Laguna Lodge to health professionals who in return donate consultations and treatments. In return they treat free of charge large groups of impoverished people with a wide range of medical ailments. The lodge acts as coordinator between the indigenous and the medical provider. We arrange family involvement, explain the options available, provide transportation and after care. Family planning, aids and health education information is offered. Pantufla Project. Room slippers are collected for the infirm and the elderly. We also give donations of food, medical items, clothing, blankets, childrens books, pens/pencils. Meals are sent to the village from the lodge for the very ill/elderly. Should guests wish to sponsor an underprivileged child we organize the meeting in the village. We supply small interest free loans for health and emergencies.

Our organic gardens grow shade grown coffee, avocados, oranges, mixed greens, vegetables and herbs. Laguna Lodge also owns, protects and conserves 30 hectares of bio-diverse land. 50% of the land was degraded due to slash and burn farming, it is now being reforested with native and endemic trees. Night infrared cameras have captured local residents including a Margay which is in the Red List of Threatened Species and is Near Threatened. The reserve is home to many endemic bird species including the Belted Flycatcher which is also Near Threatened.

Laguna Lodge is motivating a shift in perceptions away from traditional eating patterns by providing guests with sustainable meat free and plant based cuisine. We have fulfilled best practice criteria and further dedicated our restaurant menus to this carbon saving initiative. To mitigate food productions ecological damage Zotz restaurant has successfully promoted the benefits of plant sourced food consumption within a viable and profitable business model. We convey that it is not just organic produce and local provenance that matters in the food chain but our food choices. Tourists partake in satisfying gourmet meals and learn that plant based food choices are uniquely effective in reducing greenhouse gas emission and pollution while preserving biodiversity and water. A successful model measured with high occupancy and easy to replicate with no set up costs. This is the next sustainable initiative for businesses in eco-tourism. 95% of our guests are omnivores and leave with a positive attitude to eating local and organic and reducing animal sourced food.

We are challenging the status quo and encouraging others to look at their traditional eating patterns. The words - Vegetarian and vegan have a stigma, often related to a retreat or health camp, when we are talking about our foods at the lodge we use the words - plant based and meat-free, along with modern smart menus. Pre-conceived ideas do cause us to have a higher bar to jump but we have shown it can be done by maintaining a consistent and high quality of gourmet cuisine.

At the lodge we use scientific data to measure the hotel guests food consumption footprint and water footprint. The yearly average carbon footprint of meat free meals is 0.6 tons/Co2 compared to the average omnivore consumer at 4.1 tons/Co2. The hotels meat free menu also helps reduce consumption in other areas, for example an omnivore's diet requires 2.9 times more water, 2.5 times more primary energy, 13 times more fertilizer and 1.4 times more pesticides than a vegetarian diet. Three times a day at meal times we have the opportunity to lower our personal footprint, all food has a footprint, whether it be plant or animal sourced, for example root vegetables have a larger footprint than leafy greens. Daily decisions about what you are going to eat does affect our planet. Best practice is not only about tangible savings we can see at the destination, it must include ecological savings from the source. Passing up just one beef burger saves the equivalent of 40 low-flow showers. The proof is in the pudding….eating is not just a personal pastime or indulgence, our choices DO affect other species and ecosystems. Plant foods, such as grains, legumes, nuts, seeds, fruits and vegetables are more efficient to produce than animal foods.

By 2050 the planet will need to feed 2 billion more people. In 2014 the international tourist arrivals was 1.14 billion, the forecast for international tourist arrivals is 1.8 billion by 2030. Food consumptions negative impacts has largely been overlooked in eco-certification, slowly we are beginning to see plant based food choices mentioned in a few areas, where local and organic foods have been the only food criteria. Sustainable food consumption and consumer demand promotes sustainable agriculture, conserving, protecting and sustaining ecosystems, places and cultures. They meet the needs of the present without compromising the ability of future generations to meet their own needs and aids in the achieving of the United Nations Millennium Goals. Integrating a plant based menu, is an opportunity to integrate a creative and uniquely effective way to in water and environmental savings. The single most effective thing that has no investment costs that you can do to stop global warming is to change your diet from eating unsustainable animal sourced foods to eating plant based foods.

Ecological limits are being stretched as our demand for ever more resources takes precedence over the need to protect biodiversity and the Earth's vital ecosystems. Our foods are made of amino acids, vitamins and minerals, Food is a way to get calories to turn it into fuel to run our bodies. We need to get these from the primary source, not ineffiently from a second hand source. Food's carbon footprint, is the Greenhouse gas emissions produced by growing, rearing, farming, processing, transporting, storing, cooking and disposing of the food we eat. We can grow abundant food without harming the environment or depleting eco-systems, food needs to be produced and distributed in ways that prioritize the common good, the food chain should be one that nourishes people, promotes welfare of farm and wild fauna and replenishes the planet.

The United Nations Food and Agriculture Organization concluded that worldwide livestock farming generates 18% of the worlds Greenhouse Gas (GHG) emissions – by comparison, all the worlds cars, trains, planes and boats count for a combined 13% of GHG emissions. They also estimate that 20% of the planets pasture land has been degraded by grazing animals.

As the global population surges towards a predicted 9.1 billion people by 2050, western tastes for diets rich in meat and dairy products are unsustainable, says UNEP's international panel of sustainable resource management. It says "Impacts from agriculture are expected to increase substantially due to population growth increasing consumption of animal products. Unlike fossil fuels, it is difficult to look for alternatives; people have to eat. A substantial reduction of impacts would only be possible with a substantial worldwide diet change, away from animal products. Biomass and crops for animals are as damaging as burning fossil fuels. Ernest von Weizsaecker, an environmental scientist who co-chaired the panel, says the report challenged the widely-held view that rising affluence leads automatically to environmental improvements, "In the case of CO2 a doubling of wealth leads typically to an increase of environmental pressure by 60 to 80% and in emerging economies this is sometimes even higher. In the case of food, rising affluence is triggering a shift in diets towards meat and dairy products – livestock now consumes much of the world's crops and by inference a great deal of fresh water, fertilizers and pesticides. The panel have reviewed all the available science and conclude that two broad areas are currently having a disproportionately high impact on people and the planets life support systems – these are energy, in the form of fossil fuels and agriculture, especially the raising of livestock for meat and dairy products.

The Institution of Mechanical Engineers claim that water requirements to meet food demand in 2050 could reach between 10-13.5 trillion cubic meters – about triple the amount used annually now by humans. Greenhouse gas emissions are driving climate change and its impacts around the world. According to The Intergovernmental Panel on Climate Change 2014, global GHG emissions must be cut by as much as 72 percent below 2010 levels by 2050 to have a likely chance of limiting the increase in global mean temperature to 2 degrees Celsius above preindustrial levels. Every increase in temperature will produce increasingly unpredictable and dangerous impacts for people and ecosystems. As a result, there is an urgent need to accelerate efforts to reduce greenhouse gas emissions.

The World Wildlife Fund has found that lands are being cleared to create new pastures and feed the world's 1.5 billion cattle at a rate of 36 football fields of trees lost every minute, seven of those in the Amazon, this is causing accelerated species loss, resulting in the destruction of fragile ecosystems and exacerbating excess greenhouse gasses in the atmosphere. For each hamburger produced from animals raised on rainforest land, approximately 6 square meters of rainforest has been destroyed. 70% of all cleared land on the planet is exploited for livestock foods and grazing, which is around 30% of earths entire land surface.

Cows produce a vast amount of methane emissions and in terms of Greenhouse gas emissions, one cow produces the same amount in one day as an SUV driving 48 kilometers. Nitrous oxide from animal waste has 196 times the warming effect of carbon dioxide and methane gas has 23. The earth is losing one inch of topsoil every 16 years with 85% to 90% of the loss linked directly to livestock agriculture. Systematic dosing of animals is increasing bacterial resistance resulting in pandemics and widespread human health issues. Over use of fertilizers, hormones and antibiotics in animal rearing are causing biodiversity loss, human health issues, algae blooms and dead zones in the ocean.

Livestock are using directly and indirectly 53% of our global fresh water. The US environmental protection Agency estimates that one pound of processed beef requires 2500 gallons of water to produce, contrast that with the 250 gallons needed to produce 1 pound of soy or the 25 gallons needed to produce 1 pound of wheat. In the USA livestock production accounts for 55% of the erosion process, 37% of pesticides applied, 50% of

antibiotics consumed and a third of total discharge of nitrogen and phosphorous to the surface water. Livestock farming causes top soil erosion, this mixed with agro-chemicals and animal waste leads directly to sedimentation and pollution of watersheds, reservoirs, Government subsidies on water and feed hide the high costs of meat to the consumer. Animals are fed 40% of the worlds maize, wheat and soy beans. A change to a plant based diet could feed the worlds 1.4 billion people living in abject poverty with approximately 3 pounds of grain a day – twice the amount necessary to survive. The world is not running out of food, the relatively affluent found a way to consume 4 to 5 times the amount of food as would be possible if we were to eat the crops we grow directly.

Animals raised for slaughter produce 130 times more waste than the entire human population. Our waste is treated in sanitation plants, animal waste is not, typically it's sprayed onto land, much of it runs off to pollute ground water and water ways.

Here are a few interesting comparisons from the Center For Sustainable Systems at the University of Michigan - If you ate all locally grown food for one year could save the Greenhouse gas equivalent of driving 1600 kilometers, while eating a vegetarian meal just one day a week for a year could save the equivalent of driving 1800 kilometers. - Driving a hybrid car can save 1 ton of CO2 emissions a year, while adopting a plant based diet would save 1 and a half tons of CO2.

The Ocean and seas are our biggest ecosystem covering 2/3rds of the planet. The approximately 23,000 Factory fishing ships and industrialized trawlers are netting and scraping the bottom of the seas taking with them all living things, much like loggers clear cutting a forest. Currently we extract over 100 million tons of fish yearly from our oceans, with this, there is a massive amount of bycatch netted, around one third, which is thrown back into the sea maimed or dead. Because of such colossal destruction and waste, the United Nations says fishing operations are "a net economic loss to society.

There are billions of hooks and millions of miles of line in the water at any one time. If we all think we can just have a little bit then think again. Leading scientists such as Daniel Pauly suggest that if we continue to catch and eat fish at the current rate, the oceans and seas will be empty of the fish and seafood species we now eat within 35 years. Marine life are being exposed to enormous threats by humans, lack of foresight and our belief that the ocean has an unlimited bounty.

Approximately 2215 species are listed as endangered or threatened under the endangered species act (ESA). Fish including tuna, swordfish, marlin, cod, halibut, skates, flounder, herring and mackerel are being overfished and in critical decline. "From tropical groupers to Antarctic cod, industrial fishing has scoured the global ocean. There is no blue frontier left," says Ransom Myers, a fisheries biologist from the Dalhousie University, Canada. "The impact we have had on ocean ecosystems has been vastly underestimated," said Boris Worm from the University of Kiel, Germany. "These are the megafauna, the big predators of the sea, and the species we most value. Their depletion not only threatens the future of these fish and the fishers that depend on them, it could also bring about a complete re-organization of ocean ecosystems, with unknown global consequences."

Sometimes hailed as the future of sustainable food production, fish farming is actually just another form of factory farming. Farmed fish live in the same stressful, cramped conditions as land animals, and concentrated waste and chemicals from aquaculture damage local ecosystems. Fishermen are fishing further down the marine food web, catching up to 20 wild fish as feed stock for every carnivorous fish they raise. Escapes lead to further

problems, as in the North Atlantic region, where 20 percent of supposedly wild salmon are actually of farmed origin. When genes from wild and farmed fish mix, it degrades the wild population. An example of how un-sustainable fish farms are it takes 2.5 to 4 pounds of wild caught anchovies to feed the salmon to produce 1 pound of salmon meat.

It isn't just the fish that are disappearing, worldwide we are now losing animal species at a rate that will put us in a state of mass extinction - an event that has occurred five times in the last 540 million years, top causes include natural habitat destruction, overfishing, hunting, pollution and desertification. The systematic elimination of whales, wolves, sharks, tigers, mountain lions and other predators also causes irreversible changes throughout the entire food chain. We could soon be seeing the sixth mass extinction in the earth's history, and it will be the first one of human origin. Researchers attribute this crisis to "multiple atypical high-intensity ecological stressors, including rapid, un-usual climate change".

A study by U.S. scientists in the American Journal of Clinical Nutrition reports that a carnivorous diet requires "2.9 times more water, 2.5 times more primary energy, 13 times more fertilizer, and 1.4 times more pesticides" than a lacto-ovo vegetarian one.

Action is needed beyond local and organic food provenance - according to new research published in the Journal of Environmental Science and Technology, Reducing energy use by buying local pales compared to going vegetarian. As the Organic Consumers put it, "It's how food is produced, not how far it is transported, that matters most for global warming". The authors of the study say, "Shifting less than one day per week's worth of calories from red meat and dairy products achieves more Greenhouse gas reduction than buying all locally sourced food."

There is a dis-connect between responsible practice and foods served for consumption to tourists and guests. Corporate environmental responsibility could offer meat-free and plant based options as a standard, not as a diet alternative or special meal. Travellers are at their most vulnerable whilst on the road so this is an opportunity for the supplier to take leadership. Human kind's obsession with food increases with relaxation and on holiday, many people go on holiday just to eat. We must recognize the need to decouple the growth of travel and tourism from growth in the use of resources, to assure an essential balance between the needs of people with the preservation of the planet and the role of profit. To contribute effectively in sustainable development as reflected in the United Nations sustainable development goals we must commit to continue to develop the efforts of each of us to measure and target reductions in the uses of resources to minimize the impacts of the expected growth in travel and tourism. Plant based cuisine offers an open door to a reservoir of carbon and water savings that has not been exploited enough by the eco-tourism community.

Here are a few suggestions on how operators can implement sustainable foods into their best practice, the great thing about implementing plant based foods is that its immediate with no set-up costs.

Supply plant based proteins over animal/fish proteins.

Choose foods with lower carbon and water footprints.

Have a vegan/vegetarian Monday and move towards doing it every day.

Invest in vegetarian and vegan cooking books to find modern gourmet recipes.

Buy organic and local, Fairtrade and certified organic even when it costs more.

Support small organic farmers, community supported agriculture and indigenous suppliers.

Grow your own produce, compost and landscape with edible plants.

Plan meals to reduce waste and refrigeration and offer fixed menus.

Showcase heirloom and sustainable local indigenous plant foods on menus and tours.

Provide tasteful, varied, satisfying and broad range of plant based food choices.

Minimize processed foods and purchase non-perishable goods in bulk.

Choose stove top over oven cooking and gas over electric burners/ovens.

Re-use and recycle containers and use reusable bags and boxes.

Plant-a-tree programs can utilize food producing trees.

You can also consult Food Carbon Calculators for emissions and water use.

Provide literature and information on the sources of the sustainable foods being served and how food choices impact the planet.

As the United Nations Environment Program? UNEP has stated "A move towards plant based proteins is necessary for a sustainable future".

Albert Einstein said many years ago "Nothing will benefit human health and increase chances of survival of life on earth as much as the evolution to a vegetarian diet".

Thanks for listening……I could continue talking about this until the cows come in!