

Implementation of Green Practice in Maintaining Environmental Sustainability at The Santai

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Abstract: The purpose of this research is to find out the implementation of green practice at The Santai and to analyze how is the green practice can maintain environmental sustainability at The Santai. The method of data collection was using interview and observation with picture taking documentation. The technique of analysis that is used in this research is qualitative descriptive analysis. The result of this research shows that the implementation of green practice at The Santai were contained of Green Action, Green Food, and Green Donation. Green Action covers energy and water efficiency, use of environmentally friendly materials, recycle, and pollution prevention. Green Food covers the use of organic food ingredients, use of local food ingredients, use of products with environmentally friendly packaging materials, use of food ingredients from plants or vegetables such as vegetarian menus. Green Donation covers making charitable donations for environmental conservation and sustainability and educating guests about green practices and inviting guests to get involved in green practices. These practices have maintained the environmental sustainability that has positive impacts on social economic and the environment at The Santai.

Keywords: Green practice, green action, green food, green donation, environmental sustainability

Introduction

Indonesia is a country known for its natural beauty and cultural diversity, and one of the business sectors aimed at boosting its economy is the tourism sector (Bagyono, 2012). The tourism industry plays a vital role in improving the Indonesian economy, particularly on the island of Bali and the growth of tourism has increased the number of hotels and villas on the island.

With the growth of tourism and the increasing number of hotels and villas on the island of Bali, there are negative impacts that gradually erode the environmental resources on which they rely (Wahyundaria & Sunarta, 2020). The operational activities of all departments in the hotel have an environmental impact including housekeeping, kitchen, laundry, landscape, to the front office and back office (Yu et al., 2017). While villas bring positive impacts, they can also have negative impacts on the environment, such as air, soil, and water pollution (Sukradana et al., 2018). To prevent and reduce pollution, such as water pollution, sanitation pollution, and the degradation of ecosystems, hotels and villas need to implement green practices. The term green or green itself is related to concerns about environmental friendliness (Hieu & Rasovska, 2017). Green practice consists of practices that involve the efficient use of energy and water, recycling, sustainable food, waste reduction, and pollution prevention, as well as the products and services created to minimize a business's negative impact on the ecosystem (Atzori et al., 2018). Green practice is categorized into three parts: Green Action, Green Food, and Green Donation (Budiantoro et al., 2015; Schubert 2008).

Part of Green Action includes energy and water efficiency, use of environmentally friendly materials, recycling and pollution prevention. Energy efficiency is a general term that refers to using less energy to produce the same amount of service or useful output (Madonna, 2014). The energy conservation efforts that can be done are the use of LEDs as a lighting system and the use of Air Conditioners with inverter technology (Himawan & Sudiarto, 2022). Water conservation can also be done by optimizing durable and corrosion-resistant water pipes to prevent water leaks, using water pressure reducing valves and

maximizing water use efficiency by regulating the flow of water at the faucet and controlling leaks (Marbun et al., 2022). Regarding the criteria for using green products or environmentally friendly products, it is necessary to support the use of local products in hotel operations such as healthy food and crafts. The products used must also be environmentally friendly products (Fadjarwati & Nurzakiah, 2021). In terms of recycling, one of the solutions to reduce waste problems is to provide facilities and infrastructure such as TPST or Integrated Waste Treatment Sites, which are places where activities are carried out in collecting, sorting, recycling and processing waste (Pratiwi, 2021). In terms of pollution prevention, a polluted environment will cause various kinds of adverse impacts such as the death of flora and fauna, poisoning, and water, air and soil pollution (Lubis et al., 2018). Air pollution is the occurrence of environmental pollution in the air caused by the presence of contaminants that exceed normal limits. Water pollution is the occurrence of environmental pollution in water caused by human activities such as rivers, lakes, beaches and underground water so that the quality of the water decreases which results in the water not being able to function according to its designation (Kamalia & Sudarti, 2022). So wastewater must be managed first so that it can meet quality standards before being discharged into public channels (Sulistia et al., 2019). Soil pollution is the occurrence of environmental pollution in the soil or the presence of pollutant substances mixed with the soil whose existence exceeds the tolerance limit of the carrying capacity of the environment (Dewata & Danhas, 2018).

Part of Green Food includes organic farming namely using organic food products which in their production do not use chemicals such as pesticides. The local food system is the purchase of local food products that do not require the use of a lot of transportation in the process of providing them so that they do not cause emissions from excessive use of transportation. Reducing food packaging waste, namely the use of food ingredients whose packaging uses materials that can be recycled and are environmentally friendly. The use of food ingredients derived from plants, namely food ingredients that do not need to use a lot of energy to process them compared to the use of food ingredients from animals.

Part of Green Donation includes making charitable donations and participate in community activities specifically for environmental purposes that focus on conservation, sustainability and other environmental issues and providing education to the public about green practices.

Based on the background, it is evident how important the implementation of green practices is for villas in reducing and preventing environmental damage. The Santai, as an environmentally conscious villa, implements environmentally friendly practices and actively engages in environmental sustainability activities by incorporating green practices into its daily operations. Therefore, the researcher is interested in conducting research on "The Implementation of Green Practices in Sustaining the Environment at The Santai". A sustainable environment is a state of balance, survival and connectedness that allows humans to meet their needs without exceeding the capacity of their supporting ecosystems and has the ability to regenerate so that they can continue to be able to meet their needs in the future (Effendi et al., 2018).

Methodology

The research is conducted at The Santai, a boutique resort in the form of villas located at Jalan Bumbak No. 88A, Lingkungan Anyar Kelod, Kerobokan, North Kuta District, Badung Regency. This research is conducted from March 2023 until July 2023. This location is chosen because it aligns with the research theme, where The Santai is currently striving to ensure that all its operational activities are in line with green practices, and the researcher is one of the individuals involved in the issues at this research location, serving as the Resort Manager who is knowledgeable about the development of green practices implemented at The Santai.

The data analysis technique used in this research is qualitative descriptive data analysis

using textual data in the form of words or written narratives. The data were obtained through inter-views with 7 (seven) responsible persons from all relevant departments and sections to be used as the research basis. These individuals include the Chief Engineer, Housekeeping Manager, Head Chef, Senior Butler, Senior Waiter, Senior Accountant, and Human Resources Coordinator. The researcher is also thoroughly involved in the subject being studied, where the research process begins with the selection, which in this case is the selection of The Santai in implementing green practices.

Results and discussions

Results

The implementation of green practices carried out at The Santai consists of green action, green food, and green donation.

Table 1. Green Practices

Green Practices	Practices
Green Action	a. Energy and water efficiency b. Use of environmentally friendly material c. Recycling d. Pollution prevention
Green Food	a. Use of organic food b. Use of local ingredients c. Use of products with environmentally friendly packaging materials d. The use of food ingredients from plants or vegetables
Green Donation	a. Making charitable donations for environmental conservation and sustainability b. Provide education to the public about green practices

Source: Data Processed (2023)

Discussions Green Action

Energy and Water Efficiency

From the observations and data obtained, it is found that The Santai is already using LED lights for illumination in 96.28% of all villa areas, as seen in Figure 1 below:

THE SANTAI		Lights Summary					Period: May 2023
No.	Location	Qty		Garden and Tree Lights			Remarks
		Bulbs	Timers	3 Watts	5 Watts	8 Watts	
1	Villa #1	44	1			10	Total Qty of bulbs is included Garden and Tree Lights (3, 5 and 8 Watts)
2	Villa #2	46	1			11	
3	Villa #3	46	1			25	
4	Villa #5	48	1			19	
5	Villa #6	50	1			15	
6	Villa #7	61	1			25	
7	Villa #8	46	1			24	
8	Villa #9	60	1			18	
9	Villa #10	50	1			21	
10	Villa #11	47	1			20	
11	Villa #12	33	1			10	
12	Lobby, Lounge and Public Area Garden	246	1	33		70	
13	Offices and Public Areas Non LED	30					
14	Outside uplights (Lobby)	7					
15	Total Garden and Tree Lights (Uplights)	364		33	268	63	
16	Total Uplights (Lobby, garden & tree light)	371					
17	Total LED Bulbs	777					
18	Total Non LED Bulbs	30					
19	Total Bulbs	807					
21	Outside uplight (%)	45.97%					
22	LED Bulbs Used (%)	96.28					

(Source: The Santai, 2023)

Figure 1. Light Usage Report

From the results of observations and data obtained, The Santai uses LED type TVs as a facility provided in all of its villas as shown in Figure 2 below.



(Source: The Santai, 2023)

Figure 2. LED TV Facility in the Room

From the results of observations made by researchers, the air conditioners or air conditioners used at The Santai use inverter technology, which is technology that allows the air conditioner to adjust its cooling capacity based on the desired temperature, thereby reducing energy consumption.

The installation of motion sensor lights in employee lockers. The rationale behind this approach is to ensure that the lights are only used when needed. Frequent locker lighting systems stay on even when employees are not accessing their lockers. This causes a waste of energy.



(Source: The Santai, 2023)

Figure 3. Lights With Motion Sensors in Staff Locker Room

The Santai uses water taps with aerator. This faucet aerator has a physical form of a filter. As water flows through the mesh-shaped filter, the aerator divides the flow of water into many small holes allowing air to mix with the water. Water aeration and division of water into small holes creates a more consistent water flow and reduces splashing.



(Source: The Santai, 2023)

Figure 4. Water Faucet with Aerator

The Santai installed water meters in each villa. This step is taken to monitor water use closely and detect potential leaks immediately. These water meters provide valuable data that helps to identify deviations or excessive water consumption, which allows the company to take immediate action and address any issues that may arise.



(Source: The Santai, 2023)

Figure 5. Water Meter Installed in Villa

Installation of signs to promote water and electricity conservation. Placing signs to promote water and electricity conservation in employee lockers is an effective approach to raise awareness and encourage responsible behavior to reduce excessive electricity and water consumption.



(Source: The Santai, 2023)

Figure 6. Appeal for Energy & Water Efficiency Inside the Employee Locker Room

Use of Environmentally Friendly Material

One important aspect of The Santai's green action is the provision of refill mineral water provided in the villa which is a facility for guests to use glass bottles. This practice eliminates the need for single-use plastic water bottles, which are a major contributor to plastic pollution. The Santai works closely with 3rd party companies that provide and refill mineral water using their provided glass bottles which not only reduces plastic waste but also enhances the guest experience by providing a more luxurious and eco-friendly drinking option.



(Source: The Santai, 2023)

Figure 7. Refill Water Facilities in Glass Bottles

The use of stainless-steel straws is another important aspect of the eco-friendly material practices carried out at The Santai. Drinking straws made of stainless steel serve as an alternative to disposable plastic straws which are known to be bad for the environment.



(Source: The Santai, 2023)

Figure 8. The Use of Straws from Stainless Steel

The Santai avoids using plastic bags in waste collection activities which is a significant step towards minimizing plastic waste. The practice of collecting waste using bags made of nylon material that is reused is not like plastic garbage bags which are only used once. Plastic bags are notorious for their adverse effects on the environment, including pollution, resource depletion and danger to wildlife.



(Source: The Santai, 2023)

Figure 9. Reusable Garbage Bag

The Santai is committed to reducing negative impacts on the environment in every aspect of its operations, including in administrative practices. The Santai has used environmentally friendly A4 paper products that can be recycled for document printing and administrative purposes.



(Source: The Santai, 2023)

Figure 10. Eco-Friendly A4 Printing Paper

Recycling

The Santai carries out the practice of recycling waste generated from its operational activities including utilizing leftover food to become fertilizer and utilizing leaf waste to become organic fertilizer by collaborating with third parties, namely Urban Compost and sorting organic and non-organic waste where the results the collection and sorting of waste is managed by a third party, namely Eco Bali, a company that operates its own material sorting and recovery (MRF) facility to ensure that waste is managed properly and will not become a burden to the environment of Bali by maximizing recycling, reducing the amount of waste to landfill and promote composting.

One important aspect of waste management at The Santai is the utilization of food waste to produce organic fertilizer. Food waste, which is commonly generated in hospitality establishments, poses an environmental challenge if disposed of improperly. However, The Santai takes a proactive approach by working with Urban Compost to turn food waste into organic fertilizer.



(Source: The Santai, 2023)

Figure 11. Recycling Food Waste into Fertilizer

The Santai also utilizes leaf waste to produce organic fertilizer. Accumulation of leaf waste is a common occurrence in landscape and garden areas. The Santai reuses it by working with Urban Compost to turn leaf waste into organic fertilizer.



(Source: The Santai, 2023)

Figure 12. Recycling Garden Waste into Fertilizer

Apart from recycling organic waste, The Santai also emphasizes the segregation of organic and non-organic waste by providing different bins. By implementing a comprehensive waste segregation system and working with Eco Bali, a company that operates its own material sorting and recovery (MRF) facility to ensure that waste is managed properly and will not be a burden to the environment. The Santai ensures that recyclable materials are properly separated from general waste. The Santai provides separate organic and non-organic waste bins throughout the area including guest rooms, public toilets and employee offices. The housekeeping section will collect the waste separately and collect it in the waste collection room provided and Eco Bali routinely picks up the waste 3 times a week to take it to the waste processing site in Tibubeneng, North Kuta.



(Source: The Santai, 2023)

Figure 13. Sorting Organic with Un-Organic Waste

Pollution Prevention

The Santai carries out biological treatment of its wastewater, such as aerobic treatment, to remove contaminants and pollutants. The Santai also conducts monthly laboratory tests on its wastewater to analyze the composition and quality of the wastewater to ensure compliance with environmental standards and regulations.

II. HASIL PENGUJIAN					
NO	PARAMETER	SATUAN	HASIL	KADAR MAKSIMUM YANG DIPERBOLEHKAN / STANDAR	SPESIFIKASI METODE
FISIKA					
1	Zat Padat Tersuspensi	mg/L	16	50	spektrofotometrik
KIMIA					
2	*pH	-	7,23	6-9	SNI 6989.11:2019
3	Ammonia Bebas (NH ₃ -N)	mg/L	<0,001	10	spektrofotometrik
4	*BOD ₅	mg/L	11,58	28	ApHA, 23rd Edition 2017, (Section 5210.B)
5	*COD	mg/L	40,0	50	SNI 6989.73:2019
6	Senyawa aktif biru metilen	mg/L	<0,05	5	spektrofotometrik
7	Minyak dan Lemak	mg/L	<0,1	10	Gravimetri

(Source: The Santai, 2023)

Figure 14. Waste Water Laboratory Test Result

The Santai performs emission tests on diesel stacks to monitor and minimize air pollution. Emissions tests involve measuring the concentrations of pollutants emitted from diesel stacks, such as particulate matter, nitrogen oxides (Nox), and sulfur dioxide(SO₂).

Green Food

The first aspect of green food at The Santai is the use of organically sourced ingredients from farms that follow organic farming practices, avoiding the use of synthetic fertilizers, pesticides, and genetically modified organisms. The second aspect is the use of local ingredients. The Santai emphasizes sourcing ingredients from local suppliers and farmers. The third aspect is that The Santai uses environmentally friendly product packaging, such as biodegradable fresh milk packaging used in restaurants. Biodegradable packaging materials are materials that can be destroyed or decomposed by other living organisms derived from plants or animals.

The Santai incorporates plant-based options through a vegetarian menu featuring dishes free of meat, poultry and fish, with a focus on plant-based ingredients such as vegetables, fruits, whole grains and peas.



(Source: The Santai, 2023)

Figure 15. Product With Environmentally Friendly Packaging

Green Donation

At The Santai, a commitment to green practices and sustainability is an integral part of its work and operational ethic, including part of it is the green donation practice which includes Making charitable donations for environmental conservation and sustainability and provide education to the public about green practice.

As part of efforts to promote green food practices, The Santai has implemented a program to donate used cooking oil to the Lengis Hijau Foundation, which focuses on environmental preservation and sustainability. Used cooking oil, if not disposed of properly, can be bad for the environment. This can clog drains, contaminate water sources and harm wildlife. However, if handled properly, used cooking oil can be recycled and converted into biodiesel, a renewable energy source that reduces carbon emissions. Through its partnership with Lengis Hijau Foundation, The Santai ensures that used cooking oil produced from operations in restaurant kitchens is collected and processed in a responsible manner. This foundation specializes in the collection, processing and recycling of used cooking oil, so that it is not thrown away. By donating used cooking oil to the Lengis Hijau Foundation, The Santai contributes to reducing environmental pollution and supports the production of sustainable energy sources. Biodiesel derived from recycled oil can be used as an alternative to fossil fuels, reducing dependence on non-renewable resources and reducing greenhouse gas emissions. The Santai also participates in environmental clean-up activities held by Sungai Watch, an environmental organization in Bali whose mission is to stop plastic from entering the sea. The environmental clean activities that were participated in were such as activities to clean up mangrove forest areas in the Denpasar area.

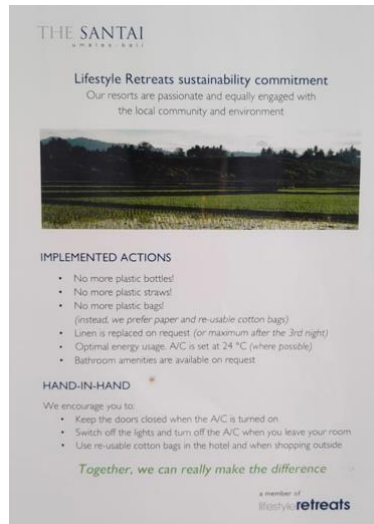


(Source: The Santai, 2023)

Figure 16. Environmental Clean Activities in Mangrove Forest Areas

The Santai believes that education plays an important role in promoting green practices and fostering environmental awareness. As part of its commitment to sustainability, The Santai provides information in the form of leaflets that are mounted in photo frames and posted on the walls of the villa rooms to inform and engage guests in The Santai's green initiatives. One of the key aspects emphasized is energy conservation. The Santai

encourages guests to pay attention to their electricity usage by turning off the lights and air conditioning when leaving the room. In doing so, guests contribute to reducing energy consumption and minimizing the carbon footprint associated with their stay. In each villa room, information is posted highlighting the eco-friendly practices that have been implemented at The Santai. These materials serve as a reminder of The Santai's efforts and provide guests with education and valuable insights on how they can actively participate in creating a greener environment.



(Source: The Santai, 2023)

Figure 17. In-Room Sustainability Commitment Information

Conclusions

Based on the results of the discussion, it can be concluded that the implementation of green practice which includes green action, green food, and green donation at The Santai has been carried out very well. The implementation of Green Action namely energy and water efficiency, the use of environmentally friendly materials, Recycle, and Pollution prevention. Green Food implementation includes the use of organic food ingredients, the use of local food ingredients, the use of products with environmentally friendly packaging materials, and the use of food ingredients from plants or vegetables such as vegetarian menus. Green Donation implementation includes giving charitable donations and participating in community activities for environmental conservation and sustainability, and providing education to the public, namely villa guests, about green practices and inviting them to participate in carrying out these practices.

Green practices can maintain environmental sustainability at The Santai on the Green Action dimension, namely reducing the use of electricity resources, conserving natural resources, minimizing waste, and reducing pollution. On the Green Food dimension, namely reducing the use of synthetic chemicals, minimizing carbon emissions, promoting the local economy, reducing packaging waste, reducing food waste, and increasing awareness about food choices that are more environmentally sustainable. On the Green Donation dimension, namely by supporting the manufacture of biodiesel energy from used cooking oil, it will reduce dependence on fossil energy sources that damage the environment. By raising awareness and inviting guests to participate in green actions, The Santai supports more sustainable behavior change.

To maximize energy efficiency, The Santai is recommended integrating an electronic key system into room door locks. This would automatically turn off lights and AC power when guests are outside the room with the electronic key. To reduce or eliminate the use of hazardous chemicals in eradicating pests, in order to further minimize negative

environmental impacts by seeking alternative measures such as integrated pest control, which is an environmentally friendly pest control practice. The Santai is also recommended to conduct emission tests related to the use of electric generator during power outages from the national grid (PLN) to ensure better environmental sustainability.

References

- Atzori, R., Shapoval, V., Murphy, K.S. (2016). Measuring Generation Y consumers' perceptions of green practices at Starbucks: An IPA analysis. *Journal of Foodservice Business Research*. <http://dx.doi.org/10.1080/15378020.2016.1229090>.
- Bagyono, S. P. (2012). *Tourism & hospitality*. Bandung: CV. Alfabeta.
- Budiantoro, A. V., Irawan, A., & Kristanti, M. (2015). The effect of green practice on green consumer behavior at The Kemangi Restaurant, Santika Pandegiling Hotel, Surabaya. *Journal of Hospitality and Service Management*, 3(2), 86-101. Hospitality Management, Petra Christian University, Surabaya.
- Dewata, I., & Danhas, Y. H. (2018). *Environmental pollution*. Rajawali Pers, Higher Education Book Division, PT. RajaGrafindo Persada, Depok.
- Effendi, R., Salsabila, H., & Malik, A. (2018). Understanding sustainable environment. *Modul*, 18(2), 75-82.
- Fadjarwati, Nurzakiah (2021). Environmentally Friendly Maintenance of Mandalawangi Hotel Tasikmalaya Based on ASEAN Green Hotel Standard. *Journal of Sustainable Environmental Management JPLB*, 2021, 5(1): 619-630. Asset Management Study Program, Department of Business Administration, Bandung State Polytechnic.
- Hieu, V.M., & Rasovska, I. (2017). A Proposed Conceptual Model Of Green practices Impacting On The Tourism Businesses And Their Performances - A Case Of Phu Quoc Island Vietnam. *Business Trends*, 10(1), 76-87.
- Himawan, D. S., & Sudiarto, B. (2022). Electricity Energy Conservation Efforts at the University of Indonesia Based on the Energy Consumption Intensity Method. *Edu Elekrika Journal*, 11(2), 30-34.
- Kamalia, D., & Sudarti, S. (2022). Analysis of River Water Pollution Due to the Impact of Natural Stone Industry Waste in Depok District, Cirebon Regency. *Journal of EnviScience (Environment Science)*, 6(1), 1-13.
- Lubis, A. I. F., Nasution, D. P., & Sembiring, R. (2018). Analysis of Environmental Pollution Impacts on Socio-Economic Factors in Coastal Areas in Pahlawan Village, Tanjung Tiram Sub-district, Batu Bara Regency. Vol. 1, No. 2. Panca Budi Development University. *J. Abdi Ilmu*, 11(2), 94-116.
- Madonna, S. (2014). Energy efficiency through water usage savings (case study: University Bakrie). Environmental Engineering Study Program, Bakrie University, Jakarta.
- Marbun, F. E., Dalem, A. A. G. R., & Muksin, I. K. Efficiency of Clean Water Use at Alila Villas Uluwatu, Bali. *Simbiosis X*. Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University.
- Pratiwi, N. N. Feasibility Study of Landfill Recycling Center Location in Landak Regency. *Journal of Civil Engineering*, 21(1), 1-11. Tanjungpura University.
- Sukradana et al. (2018). Impacts of the Presence of Villas on the Community in Canggu Village, Kuta North District, Badung Regency. *Journal of Tourism and Hospitality*, Vol. 2, No. 1, April 2018. Tourism Study Program, Udayana University.
- Sulistia, S., & Septisya, A. C. (2019). Analysis of Domestic Wastewater Quality in Office Buildings. *Journal of Environmental Engineering*, 12(1).
- Wahyundaria, D. A. & Sunarta, I.N. (2020). Identification of the Impact of Tourism Development on the Environment in Canggu Village, Kuta North District, Badung Regency. *Journal of Tourism Destinations*, Vol. 9 No. 1. Tourism Study Program, Faculty of Tourism, Udayana University, Bali.