



THE BLUE FLAG PROGRAMME AND ITS IMPACT ON THE COMMUNITY

An Explainer and detailed observation from Karnataka, India

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Contributors (Saahas)

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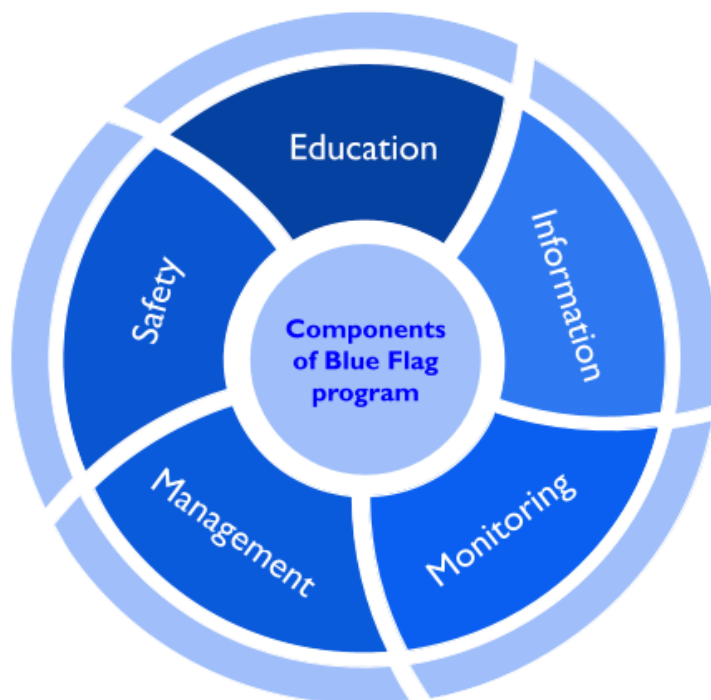
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What is the Blue Flag programme?

The Blue Flag programme is a prestigious eco-label award run by the Foundation for Environmental Education (FEE). FEE is the world's largest environmental education network, promoting sustainable development through educational and sustainable business programmes such as Eco-schools, Learning about Ecosystems and Forests (LEAF), Young Reporters for the Environment (YRE), Green Key, and Blue Flag. Headquartered in Denmark, it has 104 member organisations in 83 countries.

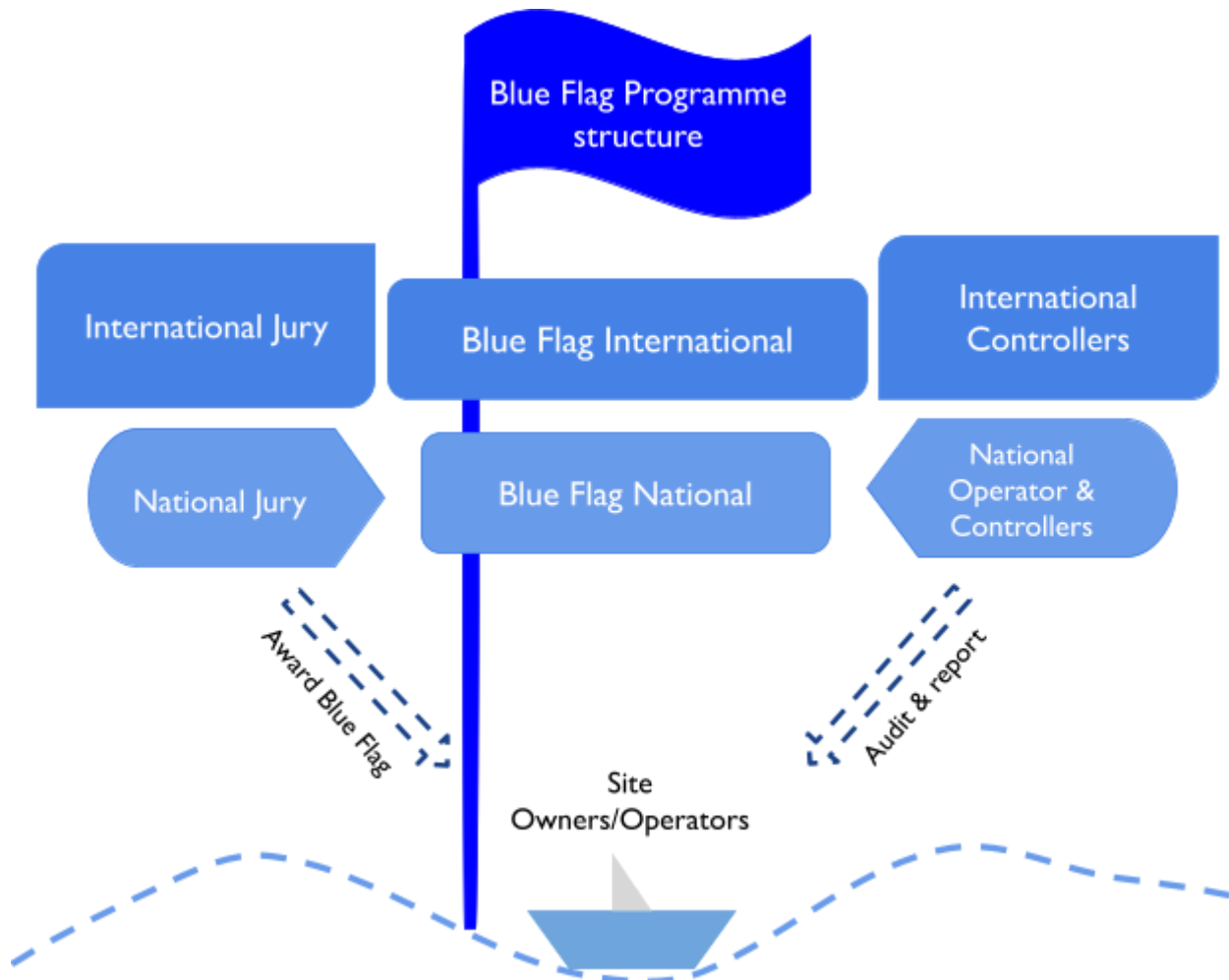
The Blue Flag programme promotes sustainable tourism through environmental protection, education, and other sustainable development practices. Beaches, marinas, and sustainable boating tourism operators are awarded the Blue Flag eco-label upon qualifying a series of stringent environmental, educational, safety, and accessibility criteria. The programme's key components or focus areas are education, information, monitoring, management, and safety.



The programme aims to connect people to their environment and encourage them to be inquisitive about nature. To facilitate this, information about a locality's endemic species is made available through citizen science initiatives, making indigenous flora and fauna easily accessible to visitors. Millions of people trust the Blue Flag programme; hence, the programme has stringent compliance criteria and regular monitoring to ensure the highest standards and meet expectations.

The programme has a global footprint; designated local organisations implement it, enforce the criteria, and monitor compliance. Safety is paramount to the Blue Flag programme, and the

owners or operators of Blue Flag sites are required to ensure that necessary safety measures are in place for their staff and the public.



The Blue Flag Certification

The Blue Flag certification or Eco-label is a voluntary award for beaches, marinas, and tourism boats. The Blue Flag Programme started in France in 1985 and has been implemented across Europe since 1987. The Blue Flag programme grew from a European programme to an international one in 2001, when South Africa joined forces with FEE in Europe. Since 2001, many countries have joined the programme. The programme has National Operators in these countries in addition to the FEE international office. The programme envisions bridging the gap between tourism and the environment. The authority responsible for beach operations applies

for the Blue Flag award; it can be the local governing body, a private hotel, a national park, or even a private beach operator.

The programme requires the applicants to meet high standards under the four broad categories mentioned below:

1. Environmental Education
2. Water Quality
3. Environmental Management
4. Safety

The criteria are established to promote environmental education, ensure public safety on beaches, and provide essential services, facilities, and recreational activities. There are 33 criteria distributed across four categories; some are mandatory (imperative criteria), and thus applicants must adhere to them to qualify for the Blue Flag award. Additionally, there are guideline criteria for which compliance is recommended but not obligatory (indicated in grey text). The table below lists the Blue Flag criteria under each category.

Category	Criterion
Environmental Education & Information	1. Information about the Blue Flag Programme must be displayed.
	2. Environmental education activities must be offered and promoted to beach users.
	3. Information about bathing water quality must be displayed.
	4. Information about local ecosystems, environmental elements, and cultural sites must be displayed.
	5. A map of the beach indicating different facilities must be displayed.
	6. A code of conduct that reflects appropriate laws and/or regulations governing the use of the beach and surrounding areas must be displayed.
Water Quality	7. The beach must fully comply with the water quality sampling and frequency requirements (monthly minimum).
	8. The beach must fully comply with the standards and requirements for water quality analysis.

Environmental Management

9. Industrial, waste-water or sewage-related discharges must not affect the beach area.

10. The beach must comply with the Blue Flag requirements for the microbiological parameters *Escherichia coli* and intestinal enterococci.

11. The beach must comply with the Blue Flag requirements for physical parameters.

12. The local authority/beach operator should establish a beach management committee.

13. The local authority/beach operator must comply with all laws and/or regulations affecting the location and operation of the beach.

14. Sensitive areas must be managed.

15. The beach must be clean.

16. Algal vegetation or natural debris must be left on the beach.

17. Waste disposal bins/containers must be available at the beach in adequate numbers, and they must be regularly maintained.

18. Facilities for the separation of recyclable waste materials must be available at the beach.

19. An adequate number of toilet or restroom facilities must be provided.

20. The toilet or restroom facilities must be kept clean.

21. The toilet or restroom facilities must have controlled sewage disposal.

22. There must be no unauthorised camping or driving and no dumping on the beach

23. Access to the beach by dogs and other domestic animals must be strictly controlled.

24. All buildings and beach equipment must be properly maintained.

25. Marine and freshwater-sensitive habitats (such as coral reefs or seagrass beds) in the vicinity of the beach must be monitored (wherever applicable)

26. A sustainable means of transportation should be promoted in the beach area.

	27. Appropriate public safety control measures must be implemented.
	28. First aid equipment must be available on the beach.
	29. Emergency plans to cope with pollution risks must be in place.
	30. There must be management of different users and uses of the beach to prevent conflicts and accidents.
Safety & Services	31. Safety measures must be in place to protect users of the beach, and free access must be granted to the public.
	32. Drinking water should be available at the beach.
	33. At least one Blue Flag beach in each municipality must have access and facilities provided for the physically disabled.

Blue Flag Programme and SDGs

The Blue Flag Programme aims to foster sustainable tourism. It claims to contribute to all the 17 United Nations Sustainable Development Goals through its campaigns against inequality, unemployment, health threats, natural resource depletion and environmental pollution.

Through its focus on environmental educational activities, sustainable tourism, public health and safety, marine biodiversity conservation, measures to ensure good water quality and sanitation practices, the programme helps in fulfilling several SDGs, like Good Health and Well-being (Goal 3), Quality Education (Goal 4), Clean Water and Sanitation (Goal 6), Responsible Consumption and Production (Goal 12), Life Below Water (Goal 14) and Life on Land (Goal 15). Other interventions promoted and mandated by the programme, such as the use of renewable energy, decentralised solid waste management and resource recovery, and local livelihood generation, contribute to other goals like Affordable and Clean Energy (Goal 7), Decent Work and Economic Growth (Goal 8) and Industry, Innovation and Infrastructure (Goal 9).

Status of Blue Flag Certification and actions upon non-compliance

In 2025-26, the Blue Flag eco-label was awarded to 5,215 sites in 51 countries. Of these, 4,321 are beaches, 738 are marinas, and 156 are tourism boats. Thirteen beaches in India have been

awarded the Blue Flag eco-label as per the International Jury list for the 2025-26 season (October to May in the Southern Hemisphere).¹

The Blue Flag must be hoisted during the Blue Flag season, symbolising the entity's participation in the Programme and its compliance with its requirements. But the flag must not be raised during periods (hours or days) when the beach fails to meet any imperative criteria. There are three degrees of non-compliance that may result in the temporary or permanent withdrawal of Blue Flag from the beach. In such instances, the rationale for Blue Flag's withdrawal should be prominently displayed at the beach or marina for visitors' attention.



Upon rectifying the identified issues, the beach operator must notify the National Operator of the re-establishment of compliance, accompanied by supporting documentation. Subsequently, the flag will be reinstated. The National Operator will conduct a follow-up inspection to verify compliance. Any falsified claims will result in the revocation of the Blue Flag for the remainder of the season.

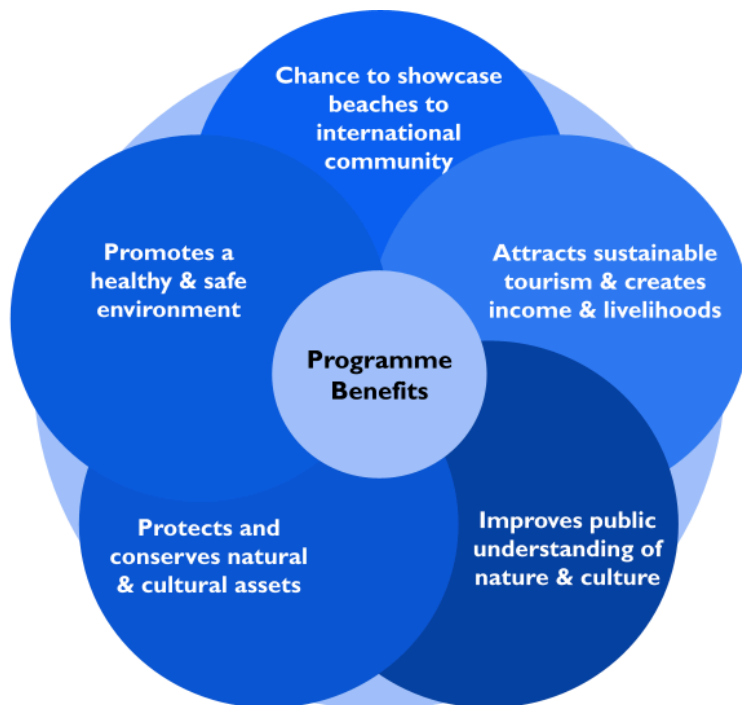
Blue Flag Programme in India

Prior to the introduction of the Blue Flag Programme in India, the Society of Integrated Coastal Management (SICOM) had initiated the Beach Environment & Aesthetic Management Services (BEAMS) programme under the World Bank-supported Integrated Coastal Zone Management

¹ Blue Flag sites per country: [Blue Flag sites — Blue Flag](#)

(ICZM) Project. The BEAMS initiative focuses on promoting environmentally responsible beach tourism by addressing gaps in infrastructure, pollution abatement, safety services, and management systems at selected beaches, while ensuring compliance with environmental norms and regulations. Building on these efforts, the Centre for Environment Education (CEE), a member organisation of the Foundation for Environmental Education (FEE), proposed introducing the international Blue Flag Beach Programme in India as a global best-practice framework for sustainable beach management. Following consultations with MoEFCC, SICOM, and FEE International, CEE facilitated the initiation of the Blue Flag Programme in India in 2018 through a national feasibility assessment and the establishment of the necessary institutional mechanisms.

The Blue Flag initiative in India was subsequently aligned with the BEAMS programme sites under the ICZM framework, enabling selected beaches developed under BEAMS to work



towards achieving international Blue Flag compliance and certification. However, the FEE authorises the initiation of the Blue Flag programme in a country following a feasibility study conducted by FEE to evaluate the country's preparedness to implement the programme and the capacity-building support required to operate and sustain it. The Blue Flag India programme seeks to offer

various benefits to local communities, businesses, and the government through the eco-label.²

² [How Blue Flag helps in conservation of Indian beaches](#)

In India, CEE operates the Blue Flag programme through the Society for Sustainable Urban Development (SSUD), which functions as the National Operator Body for India. Blue Flag India facilitates beach sites incorporating the international criteria, operation guidance and setting up the performance and monitoring systems.³ The National Operator must establish a balanced and trustworthy Blue Flag India National Jury comprising experts, government, and civil society representatives. The National Jury and FEE (International Controllers) review and tailor the international criteria to provide regional adaptations that reflect India's institutional framework, environmental and socio-economic conditions, human resources and technical capacities. This tailoring was done in 2018 through pilot Blue Flags on selected beaches; these sites served as a learning and experimental space that helped identify local interventions that strengthened programme implementation. This also allowed the local bodies in the pilot phase to upgrade their beaches to the Blue Flag standards.⁴

The National Jury must meticulously evaluate applications for Blue Flag certification and subsequently recommend finalists to the FEE International Jury. Successful applicants are awarded the Blue Flag beach certification. The National Operator is responsible for the regular monitoring and auditing of awarded sites (inspection visits conducted by National Controllers) to ensure ongoing compliance throughout the season, with reports submitted to the International Controllers, who also conduct audits to verify that National Operators are effectively managing their respective programmes. The award is subject to renewal each season, contingent upon adherence to the 33 criteria. The National Operator promotes the programme and award process to interested candidates and provides guidance throughout the registration and application process. Additionally, the National Operator conducts site visits to identify gaps and recommend interventions to ensure compliance with the required standards. Furthermore, the National Operator facilitates connections between the national programme and programmes in other countries, as well as with the Blue Flag International.

Blue Flag Beaches in India

³ [National Operator](#)

⁴ [Certification process](#)

SICOM and the MOEFCC shortlisted 13 beaches nationwide for the pilot programme.⁵ Although additional sites were initially examined, only ten beaches were finally taken up under the BEAMS pilot programme. The sites that were not pursued further were not rejected due to cultural conflicts; rather, they were found to be technically unsuitable or unable to meet the required compliance criteria for the programme. The programme (through the National operator) gives potential applicants a few years (based on the readiness and capacity of the applicant beach/beach operator) to fulfil or comply with the 33 programme criteria, after which the National and International Juries review the application for compliance and award the Blue Flag. There is a National controller who conducts inspection or control visits at each Blue Flag-certified site in the State (Beach Environment and Aesthetics Management Services (BEAMS)).⁶ The visits are anonymous and occur once a year (during the Blue Flag season, October to May). Inspections also happen when a reported non-compliance is rectified and needs inspection before the Blue Flag is reinstated.⁷ The annual inspection focuses on the safety, water quality, and operation of facilities. If safety or water quality is compromised at any point during the season or off-season, the Blue Flag is down or not hoisted. However, if the facilities are down during the off-season, they do not violate the criteria.

As of January 2026 International Jury list, thirteen sites or beaches in India have been awarded the Blue Flag eco-label. Cleanliness and waste management are key components of Blue Flag beaches in India. In addition, most of these sites include safety parameters and other sanitation facilities, such as bathing ghats, gender-specific toilets, grey/black water and faecal sludge management. The Blue Flag certification for Rushikonda Beach was temporarily suspended in February 2025 due to non-compliance in the following areas: litter and inadequate waste management; a stray dog menace affecting visitors' safety; non-functional CCTV cameras; poorly maintained public facilities, such as toilets and changing rooms; and parking and security issues. However, it was reinstated/regained after a month (mid-March) when the compliance requirements and the Jury comments were addressed. The Minicoy Thundi beach and Kadmat

⁵ [Beach in Puducherry selected for blue flag certification | Puducherry News - Times of India](#)

⁶ [Press Release: Press Information Bureau](#)

⁷ Information based on a semi-structured interview with a Blue Flag Beach manager, conducted by the authors in [October, 2024 & April 2025].

beach in Lakshadeep had blue flag certification until the 2024-25 season; however, they were removed from the Jury list of the 2025-26 season.

Blue Flag Beaches in India (2025-26), the year awarded (first time)	Key features of the beach
Shivrajpur Beach Dwarka, Gujarat, 2020 Management body: Devbhumi Dwarika District	Swimming area Water sports Disabled friendly Coral reefs Kiosk
Golden Beach Puri, Odisha, 2020 Management body: Puri Municipality	Plastic-free Efficient waste management system Renewable energy usage - solar powered
Ghoghla Beach Diu, 2020 Management body: Diu Municipality	Watersports Safe swimming area Clean shoreline
Eco Beach Kasarkod Karnataka, 2020 Management body: Kasarkod Gram Panchayat	Efficient waste management system Greywater treatment plants Clean drinking water facilities Clean washrooms and changing rooms
Padubidri Beach Karnataka, 2020 Management body: Udupi District Tourism Department	Nature trail Renewable energy source - solar Solid & liquid waste management infrastructure Educational activities RO-based potable water supply
Rushikonda Beach Andhra Pradesh, 2020	Clean bathing area Open gym and recreation Area

Management body: Greater Visakhapatnam Municipal Corporation	Safety
	Water sports
Radhanagar Beach	Well-maintained bathing & safe swimming area
Andaman & Nicobar Islands, 2020	Safety
Management body: Shyamnagar GP, Swaraj Dweep, South Andaman	Plastic-free
	Clean water
Kappad Beach	Clean restrooms and shoreline
Kerala, 2020	Safe swimming area with lifeguards
Management body: Chemancheri Grama Panchayat	Renewable energy - solar lights
	Waste management infrastructure
Kovalam Beach	Safety (Lifebuoys, CCTV, rescue team)
Tamil Nadu, 2021	Drinking water availability
Management body: Beach Management Committee, District Collectorate, Chengalpatu	Clean shoreline
	Waste management infrastructure
Eden Beach	Clean shoreline, restrooms & changing rooms
Puducherry, 2021	Water sports & recreation
Management body: Puduchery Collector	Nature walk trail and bird watching
	Wheelchair access
Sunapur beach,	Drinking water and restrooms
Odisha, 2023	Zero liquid waste discharge system
Management body: Berhampur Municipal Corporation, Sunapur	Wooded area behind the shoreline
	Native dune sand binders
Chala Beach	Safe swimming zones with lifeguards
Kerala, 2024	Butterfly park and turtle hatchery

Management body: Azheekode Grama Panchayat, District Tourism Promotion Council	Children's Park
Thannirbhavi Beach	Accessible toilets and water ATMs
Karnataka, 2024	Trained lifeguards
Management body: Mangaluru Corporation	Safety equipment
	Bathing huts and changing rooms

A closer look at Padubidri Blue Flag Beach, Karnataka

Padubidri Beach is located within Padubidri GP in the Udupi district, Karnataka. Saahas has been working along this stretch of Karnataka coast since 2018, implementing multiple interventions to strengthen SWM systems across coastal areas and upstream catchments in Udupi district. These efforts have focused on improving segregation practices, strengthening collection systems, and building the capacity of local institutions through behaviour change communication and training. Padubidri GP has been part of Saahas's rural SWM interventions aimed at improving household-level waste management practices and institutional capacity. In addition, under the Swachh Karavali Mission supported by Xiaomi India Private Limited, Saahas is working across 12 GPs in Kundapura and Byndoor taluks to reduce marine litter by diverting upstream waste away from beaches such as Trasi and Maravante into appropriate management pathways.

As part of this broader coastal and marine litter prevention work, Saahas has also supported Padubidri Beach by conducting student-focused awareness activities on marine pollution and conservation. Within this context, Padubidri Beach, designated as a Blue Flag beach, offers a relevant case to examine whether the Blue Flag programme contributes meaningfully to improved SWM in the surrounding areas and to reducing marine litter. This study therefore assesses the on-the-ground outcomes of the Blue Flag programme at Padubidri Beach, particularly its influence on local waste management systems, community practices, and coastal environmental outcomes.

Padubidri beach is characterised by its calm, picturesque rural landscape, which seamlessly transitions into a cerulean seascape. The coastline of Padubidri Blue Flag Beach spans a distance of 1.2 kilometres, with a river delta marking one end. The initiative to comply with the Blue Flag

programme commenced in 2018 at Padubidri Beach. Initial efforts focused on cleaning and de-weeding, while ensuring the preservation of 80% of the local vegetation, as stipulated by the program. The MoEFCC provided funding for capital expenses related to infrastructure and other facilities necessary for compliance, as well as for operational and maintenance expenses for the initial two years. The Blue Flag eco-label was awarded on 12th October 2020 following compliance assessments & visits by the National Jury and Controllers.

The selected coastline for the programme was a neglected graveyard- subject to vandalism and illicit local activities. Additionally, the local population regarded this stretch of coastline as inauspicious, attributing supernatural occurrences to the area near the river delta during midday and golden hours. Consequently, the rejuvenation of this section of the coastline benefited the area and local communities. Prior to applying for certification, the surrounding locality (within a 2 km radius) was evaluated for basic sanitation infrastructure, such as toilets and drainage, as well as the inflow of industrial effluents. Failure to meet these criteria would have resulted in disqualification. Consequently, several small industries in the vicinity of the beach were relocated.

To ensure adherence to water quality and waste management standards, residents within a 2-kilometre radius of the beach were informed of the importance of proper sanitation and waste management practices. In the first year, several awareness sessions were conducted to educate them about the adverse effects of dumping and burning waste. Blue drums were distributed to these residents to facilitate the temporary storage of waste until collection. Given that environmental education is a crucial component of the Blue Flag Programme, rallies and awareness sessions on marine conservation were organised in schools near the beach. Additionally, students are granted free entry to festivals and special events to encourage their participation in beach programs. The beach is equipped with information boards that provide details about the Blue Flag Programme and the region's marine biodiversity.



Operating and maintaining the Blue Flag site requires substantial time and resources to ensure compliance with all established criteria. Padubiri Beach employs 35 individuals for daily operations and maintenance, including cleaning staff, lifeguards, security personnel, medical staff, supervisors, a CCTV operator, office staff, and a site manager. During peak season, the beach sees up to 4,000 visitors per day, while during other periods, the average is 750. Initially, the majority of visitors were local residents; however, currently, approximately 70% originate from other districts within Karnataka, and 20% are from other states across the country. The primary attractions for visitors are water sports and recreational activities.

The Padubidri Blue Flag Beach generates an annual revenue of 74 lakhs/season through entrance fees, parking fee and water sports. The operational and maintenance expenses (staff salaries and maintenance) total to approximately 61 lakhs/yearly resulting in a net positive income. Additionally, it provides livelihood opportunities for the residents of Padubiri GP and local fishermen.

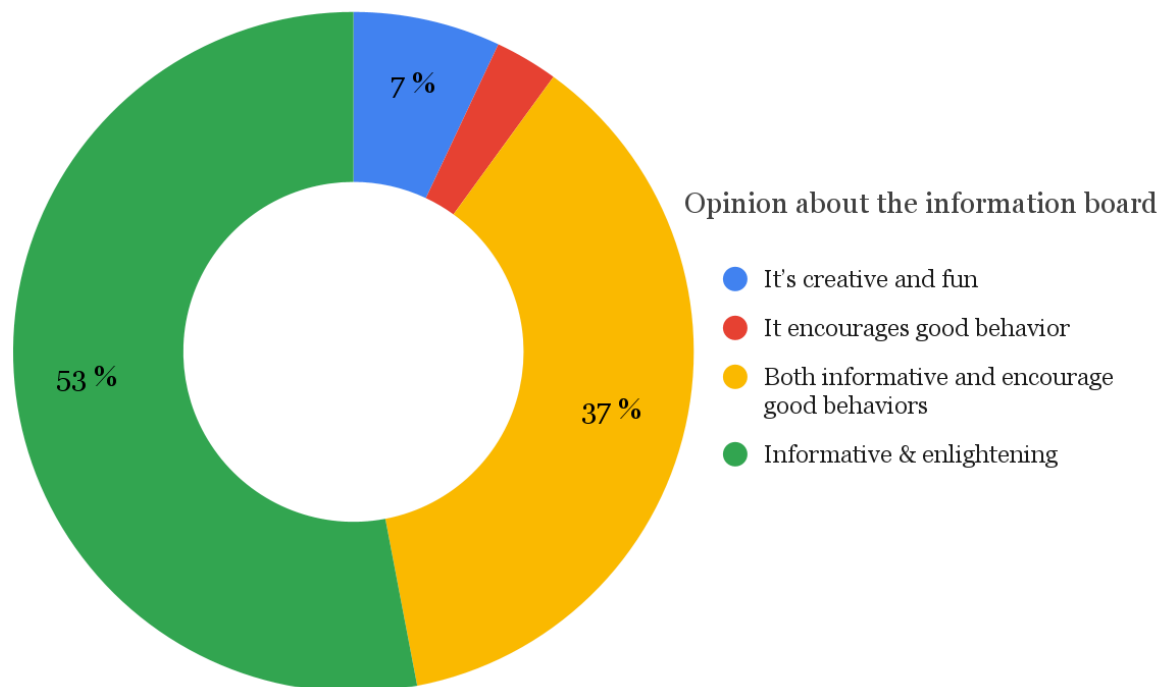


The waste management system at Padubidri Beach begins at the entrance and includes measures to prevent littering. Initially, the beach implemented a plastic-free policy; however, this was discontinued following complaints from visitors about the need for plastic bags to carry damp clothing. Plastic bags and bottles are not available for purchase within the beach premises, and the food court serves food in reusable tableware. Upon entry, visitors are informed of the no-littering policy and instructed on the use of colour-coded bins for wet and dry waste. Waste collection bins are strategically placed along the shoreline at intervals of 25 bins per kilometre. Cleaning and maintenance personnel are responsible for ensuring compliance with the no-littering policy and for ensuring that visitors properly use waste disposal bins. They also issue warnings to individuals who fail to adhere to these guidelines. On average, the bins collect approximately 3 kg of wet waste and 0.5 kg of dry waste daily. Wet waste is processed in a 24-hour composting machine, and the resulting compost is utilised in the garden. Dry waste is sorted into various materials at the solid waste management unit on the beach. During the initial two years, the sorted recyclable materials were accumulated and sold to a recycling facility in Gujarat. Currently, the dry waste is transferred to the Gram Panchayat-operated Dry Waste Collection Centre every 15 days.

Impact of the Blue Flag Programme evaluated through Padubidri Beach.

Cultivating an eco-cognizant future generation

The primary aim of the Blue Flag programme is to promote environmental education through tourism. At Padubidri Beach, visitors are informed about the Blue Flag programme via information boards and oral communication at the entrance about the usage of bins. Additionally, experts are invited to deliver lectures on marine biodiversity and ocean conservation during special events. The Beach Authority aims to conduct five environmental education activities annually. Awareness sessions and rallies are organised in nearby schools, and student volunteers from college level and above who express interest are permitted to participate in maintenance and educational activities at the beach.

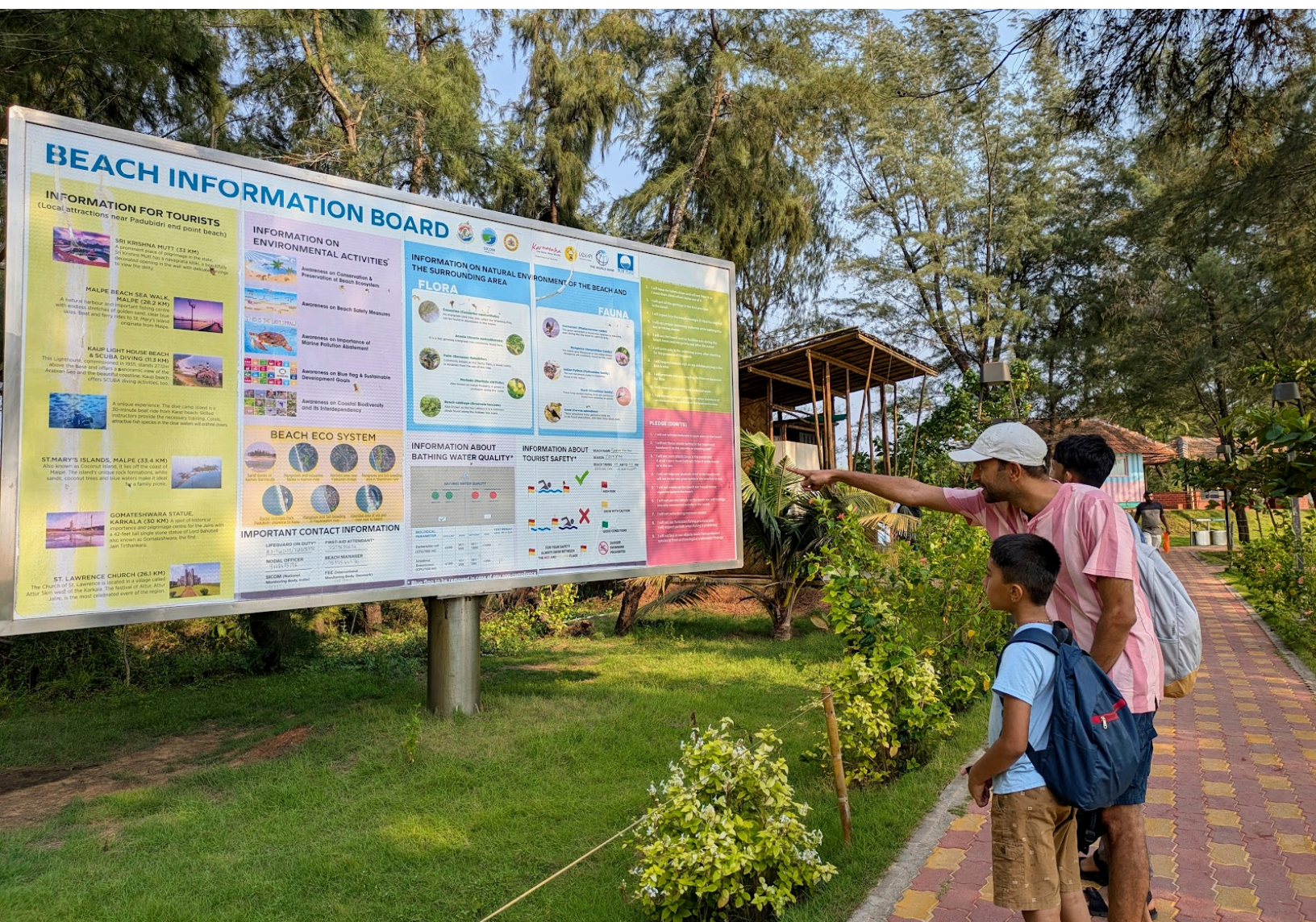


To understand public opinion of Blue Flag beaches, the Saahas team conducted a survey of 30 visitors at Padubidri Beach to assess their views. The survey was conducted during the Blue Flag Season in October 2024 and April 2025 on weekends. All participants were aware of marine pollution, its sources, and the consequences of littering, including loss of marine biodiversity. This awareness was gained through social media, educational activities, and information boards

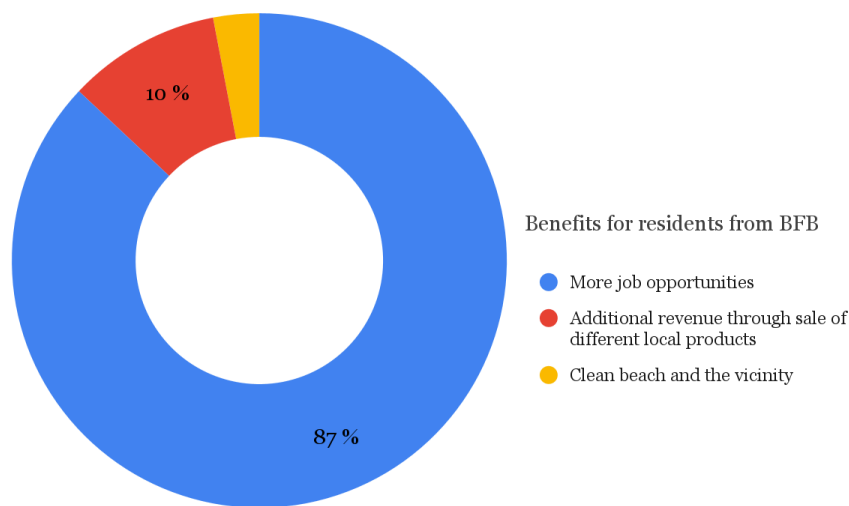
at Blue Flag Beach. Over 90% of respondents found the information on the boards and educational activities enlightening, prompting behavioural changes in the use of single-use plastics (SUPs) and in waste disposal practices. The Blue Flag programme has been successful in engaging youth and imparting knowledge and awareness about marine pollution and the importance of conserving aquatic biodiversity among visitors.

Fostering skilled local livelihoods

In addition to its educational initiatives, the programme offers a range of environmental and social benefits. The Blue Flag initiative at Padubidri Beach has facilitated local employment opportunities for residents of Padubidri Gram Panchayat. A significant proportion of the staff engaged in maintenance activities at the beach were local inhabitants. Furthermore, the lifeguards stationed at the beach are fishermen who have received specialised training for this programme. The local community supports the Blue Flag initiative because it provides



employment opportunities. Skill development training was provided to these staff members based on their specific roles and responsibilities. The beach manager provides sanitation-related training for staff, and the Rashtriya Life Saving Society trains the lifeguards. The cleaning and maintenance staff received training on dry waste sorting and operation of the composting machine within the waste management unit. Beyond direct employment opportunities, the Blue Flag programme also offers indirect livelihood support and income-enhancement activities. The food court at the beach procures fish from local fishermen, thereby supporting their livelihood. Additionally, local artisans and craftsmen are occasionally employed to enhance beach aesthetics; these activities are monitored by the Beach Manager.



A brief survey was conducted among 30 residents near the Padubidri Blue Flag beach to capture their perspectives on the Blue Flag program.

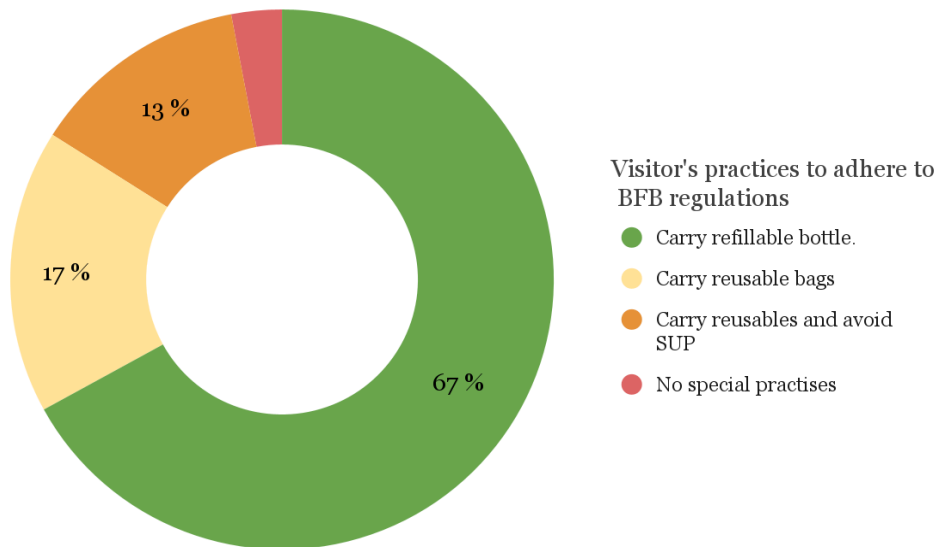
Approximately 87% of respondents agreed that the programme

generated employment opportunities for local communities. Approximately 10% of the respondents acknowledged that additional revenue was generated through the sale of local products near the beach. Many respondents also noted that they had free access to the clean and well-maintained beach.

Inoculating responsible tourism

Blue Flag beaches foster a vision of pristine coastlines and responsible tourism among visitors. At the Padubidri Blue Flag Beach, for example, a team of 20 staff members is dedicated to maintaining cleanliness and managing the solid waste unit, which includes a composting machine. They also ensure the absence of litter on the shoreline through continuous monitoring. Bins for wet and dry waste are strategically placed every 50 meters to encourage

visitors to dispose of waste properly, thereby minimising littering. These bins also promote awareness of waste segregation. The maintenance staff and manager of Padubidri Blue Flag Beach observed behavioural changes among regular visitors, who now use the appropriate bins for waste disposal and bring reusable crockery and containers for snacks and refreshments. Additionally, many visitors have expressed interest in learning more about the Blue Flag

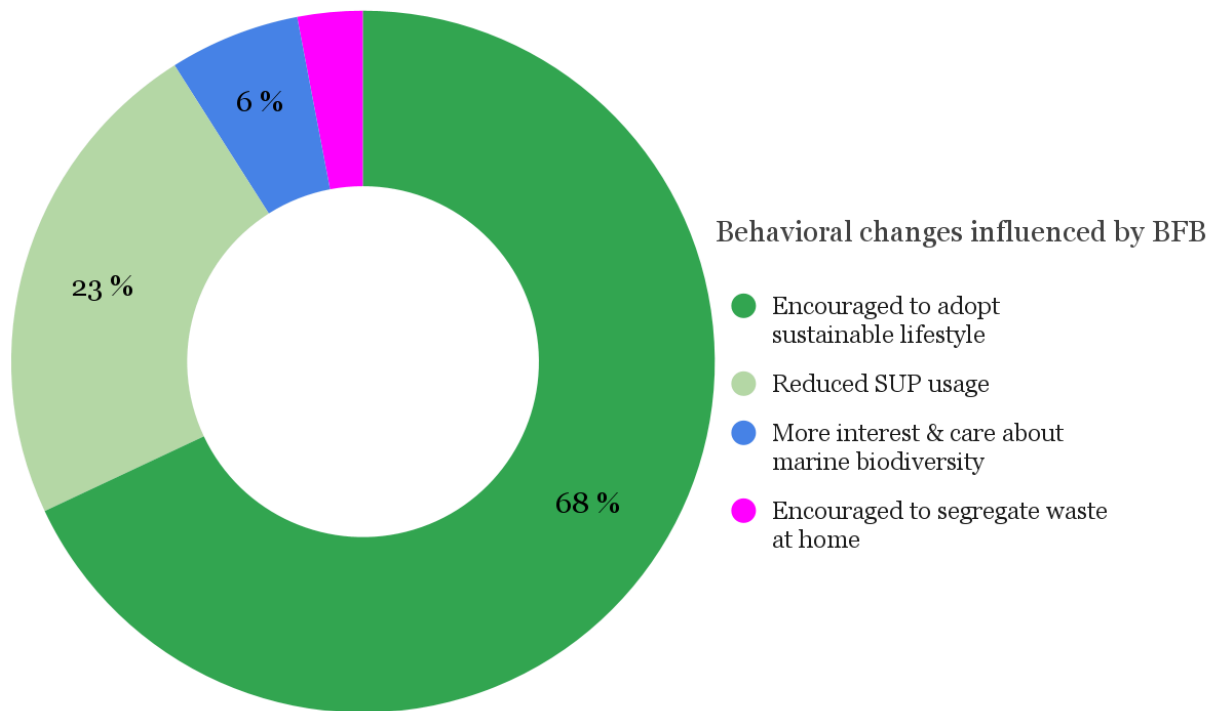


programme and enquiring about its objectives and criteria.

The survey revealed that 93% of local residents believed that the beach promotes sustainable tourism, while

84% (67 + 17%) of visitors reported carrying refillable water bottles or reusable bags during their visits. Some respondents also mentioned avoiding single-use plastic. These practices reflect increased environmental consciousness among tourists and an understanding of the impact of littering on marine ecosystems. The beach authority supports these practices to comply with the Blue Flag Beach certification criteria.

Educational and awareness initiatives, along with the informational signage at Blue Flag Beach, have significantly influenced a substantial proportion of visitors (68%) to adopt more sustainable lifestyles, such as reducing consumption and opting for sustainable alternatives to plastic.



Notably, 23% of interviewees reported a reduction in their use of SUP. A minority of respondents (7%) indicated that their visit to Blue Flag Beach heightened their interest in marine biodiversity and motivated them to care for aquatic ecosystems. Furthermore, approximately 97% of the visitors interviewed asserted that they utilised appropriate bins for waste disposal at Blue Flag Beach. Some respondents also reported that this practice inspired them to begin segregating waste in their households. Consequently, the Blue Flag programme effectively promotes waste segregation and waste reduction among visitors.

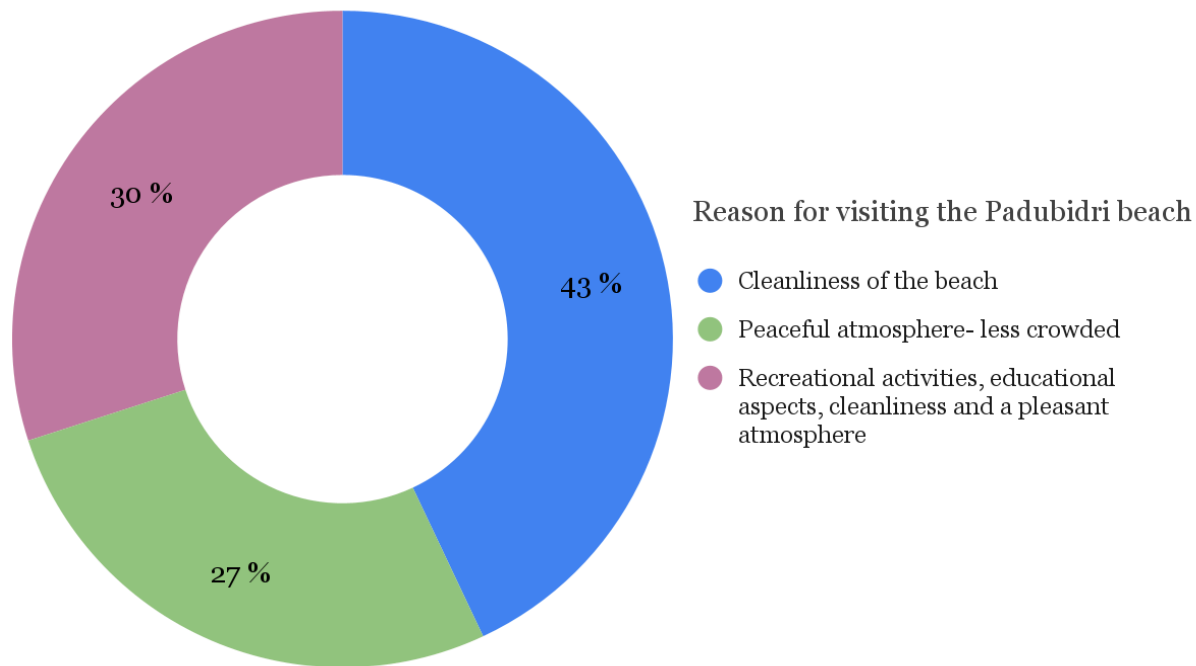
Ensuring the ebb and flow of clean waves

Blue Flag beaches are known for their clean coastlines and safe waters. The shoreline is maintained visually clean by preventing littering and by routine cleaning of the 1 km stretch. The Padubidri beach takes the following measures to prevent littering.



Wet waste collected from the bins is processed using a 24-hour composter, while dry waste is sorted and dispatched to the Gram Panchayat-operated Dry Waste Collection Centre (DWCC). Sewage and blackwater from the toilets are treated on-site in bio-toilets, thereby preventing leakage into the seawater. In addition to efficient solid waste management at the beach, routine measures are implemented to ensure that water quality meets standards for primary-contact recreation activities.

Cleanliness and a pleasant atmosphere are significant factors that attract visitors to Blue Flag beaches. The majority of the residents and visitors surveyed concurred that these are the distinctive features of Padubidri Blue Flag Beach, with many tourists visiting specifically for this reason. Notably, 97% of visitors and 83% of residents interviewed reported disposing of their waste in appropriate bins at the Blue Flag beach. Furthermore, 90% of respondents indicated that they use bins for waste disposal on other beaches (non-Blue Flag-certified) when available, otherwise resorting to littering. The remaining 10% stated that they used the bins, if available, or carried their waste home for disposal. ***Therefore, installing bins along beaches is crucial to maintaining the cleanliness of Indian beaches.***



Limitations of the Blue Flag programme- Padubidri context

The Blue Flag programme is effective as a certification and benchmarking tool. In India, it appears to function more as a conservation and standardisation mechanism for low-pressure or emerging tourism beaches rather than as an intervention aimed at rehabilitating environmentally stressed, high-footfall coastal areas. The absence of highly commercial or high-footfall beaches from the certified list suggests a selection bias that limits the programme's applicability to India's most environmentally stressed coastlines. While the programme has successfully demonstrated best practices in beach management, its impact remains spatially limited.

The Blue Flag programme has demonstrably improved the physical condition of Padubidri Beach and enhanced the visitor experience. However, from the perspectives of local communities and governing bodies, several expectations remain unmet. To better understand local perceptions and expectations regarding the programme, surveys were conducted with 30 residents living in the vicinity of Padubidri Beach, along with an interview with the Padubidri GP Development Officer (PDO).

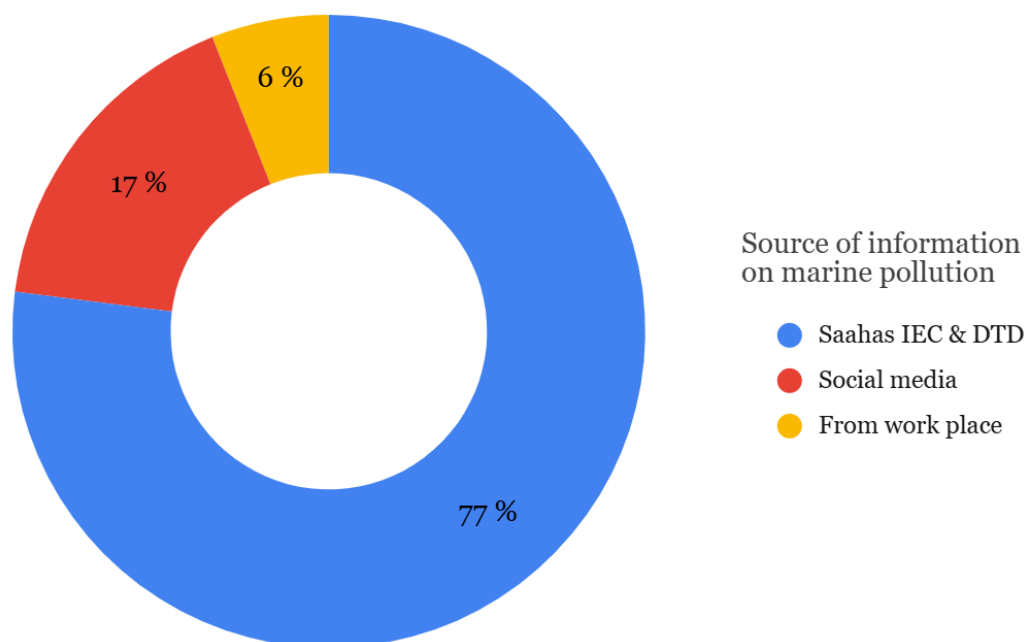
Improper waste disposal in the immediate vicinity

Most residents acknowledged that Padubidri Beach is noticeably clean and well-maintained; however, this perception is limited to the 1.2 km stretch of shoreline under the beach authority's jurisdiction. Field observations identified several locations outside the Blue Flag boundary that were vulnerable to garbage accumulation. Regarding sanitation practices, despite the beach authority's claims of providing bins to promote waste segregation and collection, none of the interviewed residents reported practising it. More concerning, residents indicated that they dispose of waste on the shoreline or burn it, citing the absence of a regular household waste collection system. While the waste collection vehicle services the Blue Flag beach once every 15 days, adjacent residential areas are largely excluded from routine collection.

In effect, the local community's sanitation system does not benefit from the Blue Flag programme. Over the long term, these gaps in service delivery and waste management could undermine beach water quality through continued improper waste disposal, thereby threatening the very environmental standards the programme seeks to uphold. Notably, 90% of respondents reported having awareness of marine pollution and its environmental repercussions; however, they did not perceive a connection between their own waste-disposal practices and their contribution to the problem.

Low penetration of awareness activities

Although under the Blue Flag programme, the Padubidri Beach authority claims to have conducted multiple awareness initiatives targeting local communities and nearby schools, focusing on marine conservation, the impacts of marine pollution, and the importance of proper sanitation practices, these efforts appear to have had limited reach in the adjacent residential areas. When residents were asked about the sources of their awareness regarding marine pollution and conservation, the majority attributed their knowledge primarily to Saahas's IEC materials and door-to-door awareness campaigns. This indicates that the awareness activities under the Blue Flag programme did not effectively penetrate or influence the communities living in close proximity to the certified beach.



Reliance on 24-Hour Composters

The program's environmental management criteria require the beach authority to implement facilities that ensure waste segregation and the sorting of recyclables. Additionally, the programme promotes sustainable practices at the beach. At Padubidri Beach, the solid waste management unit has allocated space for segregating mixed waste and sorting recyclables. However, the use of 24-hour composters at Padubidri Beach raises concerns regarding the effectiveness and sustainability of their waste management practices. Existing scientific literature indicates that 24-hour composters do not effectively compost organic waste, as composting requires at least 25 days and microbial colonisation. Instead, 24-hour composters dehydrate the waste and remove volatile compounds, leaving behind a charred residue. This process is energy-intensive, and the charred residue can be detrimental to the soil, flora, and fauna, due to potential release of acidic phenolic compounds upon contact with water⁸. While

⁸. Kucbel, M., Raclavská, H., Růžičková, J., Švédová, B., Sassmanová, V., Drozdová, J., Raclavský, K., & Juchelková, D. (2019). Properties of composts from household food waste produced in automatic composters. *Journal of Environmental Management*, 236, 657–666. <https://doi.org/10.1016/j.jenvman.2019.02.018>

• Gulati, M. K. (2020). 24 to 48 hour Composting Machines: Do They Really Produce Compost as the Final Output and Their Viability for Community Composting in Indian Cities.

these devices offer a rapid solution, they fail to provide the necessary time and conditions for proper composting, potentially leading to environmental issues and missed opportunities for nutrient recycling. Alternative approaches, such as traditional composting methods or other sustainable waste management technologies, can be considered to ensure that organic waste is appropriately processed and utilised. This would benefit the local ecosystem, align with broader environmental conservation goals, and promote a more circular economy in beach waste management.

Disconnect between Blue Flag Certification and local sanitation systems

While the Blue Flag programme does not explicitly commit to improving sanitation services or driving development in communities adjacent to certified beaches, such outcomes are implicitly expected by local stakeholders. Interviews with residents revealed that the programme has not led to improvements in SWM services in the surrounding neighbourhood. The door-to-door waste collection service in the GP remains inconsistent, leading residents to resort to open dumping or burning waste. These unmanaged waste streams ultimately pose risks to coastal water quality, undermining the environmental objectives and the reputational integrity of the Blue Flag certification.

Discussions with the PDO of the Padubidri GP further indicated that the GP has derived limited institutional or developmental benefits from the programme. Despite this, the GP is required to prioritise timely service delivery to the Blue Flag beach, including ensuring mobility access (such as road repairs and the removal of obstructions) and facilitating the clearance of dry waste from the beach waste management unit. However, these responsibilities are not accompanied by commensurate economic, infrastructural, or capacity-building support.

A critical constraint for the GP is the lack of dedicated human resources for SWM, which undermines household-level coverage and the reliability of service delivery. This constraint becomes particularly acute when the Beach Authority demands immediate rectification of sanitation or public service failures that may affect visitor footfall. Furthermore, reliance on contractual sanitation staff—who often lack accountability and sustained engagement with solid waste management—has led to numerous consumer grievances.

In this context, extending financial (tipping fee) and service support from the Beach Authority to the GP and the adjacent community could significantly strengthen sanitation systems and SWM outcomes beyond the certified beach boundary. Such integration would ultimately amplify the Blue Flag programme's long-term environmental impact and credibility.



Concluding Remarks

The Blue Flag programme reimagines the vision of clean, pleasant coastal landscapes by setting new standards for sustainable tourism. It nurtures eco-cognizant, eco-conscious future generations and sustainable marine tourism while supporting local livelihoods. However, the Blue Flag certification is typically awarded to a 1 or 2-km segment of the coastline.

Consequently, the programme's environmental benefits are limited if littering or effluent/sewage discharge persists in areas adjacent to the certified zone and remains unaddressed. ***Hence, while the programme has successfully demonstrated best practices in beach management, its impact remains spatially limited.***

Padubidri Blue Flag Beach established a new benchmark for cleanliness among beaches in Karnataka, attracting numerous tourists nationwide. The visitors reported feelings of satisfaction and enlightenment, and they considered water sports, recreational activities, and educational programs essential to their experience. The initiatives to enhance local livelihoods aligned with the program's vision and sustainable development goals. ***However, the involvement of beach authorities in community outreach activities related to sanitation and SWM has been minimal beyond the initial year.*** Promoting adequate sanitation and SWM practices within adjacent communities can improve water quality by mitigating marine pollution. Consequently, continuous awareness campaigns and regular monitoring of community sanitation and waste management practices are crucial to enhance the aesthetic and environmental quality of the surrounding area.

Engaging students from nearby schools to raise awareness of marine conservation and proper sanitation practices can be particularly effective, as the younger generation often plays a pivotal role in driving behavioural change within the community. This strategy will contribute to the development of environmentally conscious future generations. Implementing appropriate sanitation infrastructure and sustainable SWM at beaches can facilitate nutrient and resource recovery, thereby enriching the local environment. Therefore, beach authorities should further explore these aspects.

The programme has not resulted in improvements to SWM services even within the immediate surroundings of the beach. One key expectation from the programme and the

beach authority is the development of the local community and the generation of additional revenue for the local governing body to support the prompt services they provide. Hence, incentivising these services by allocating a percentage of the beach's profits would encourage the local government to sustain them. Aligning community aspirations with sustainable tourism enhances the impact and long-term success of the Blue Flag programme.

