



# The Journal Gastronomy Tourism

Journal homepage:

<https://ejournal.upi.edu/index.php/gastur/index>



## Developing Mangrove Gastronomy Attractions through a Coast-to-Table Model: An Action Research on Ecosystem Service-Based Food Tourism

Farta Ade Saputra\*, Farid Asfari Rahman, Bergas Anggito Adjie, Alfiandi Imam Mawardi

Universitas Pembangunan Nasional Veteran Jawa Timur, Indonesia

\*Correspondence: E-mail: [farta.fisip@upnjatim.ac.id](mailto:farta.fisip@upnjatim.ac.id)

### ABSTRACT

While mangrove ecosystems are widely recognized for their regulating services, their potential as a source of provisioning services transformed into gastronomy attractions remains under-explored. This study aims to evaluate the viability of a "Coast-to-Table" gastronomy model, centered on an interactive live cooking show and workshop as a professional tourism product at the Surabaya Mangrove Botanical Garden. Using a single-cycle Participatory Action Research (AR) approach—comprising planning, action, observation, and reflection—this study involved 20 tourism students as prospective developers and using expert lecturers to provide a professional evaluative perspective. Data were collected through field observations and a five-point Likert scale questionnaire (n=24). The results indicate that the Coast-to-Table model is highly viable, achieving an overall mean score of 4.52. The highest score was recorded in the ecosystem services dimension (4.61), demonstrating that the live cooking and workshop narrative effectively communicates the link between coastal conservation and food security. A key technical innovation identified was the use of mangrove syrup as a substitute for rum, which enhanced both the local authenticity and the "halal" value of the attraction. This research establishes the "Coast-to-Table" framework as a practical blueprint for transforming provisioning services into tangible, high-value cultural experiences in urban coastal environments.

### ARTICLE INFO

#### Article History:

Submitted/Received January 2026

First Revised April 2026

Accepted June 2026

First Available online June 2026

Publication Date June 2026

#### Keyword:

Mangrove Gastronomy; Coast-to-table; Ecosystem Services; Action Research; Co-Creation Cooking Workshop



## 1. INTRODUCTION

The rapid development of gastronomy tourism has shifted from mere food consumption to a more profound search for authenticity, sustainability, and educational experiences. In the context of coastal tourism, mangrove ecosystems have long been recognized for their regulating services, such as coastal protection (Gomes et al., 2025; van Haspen et al., 2023) and carbon sequestration (Ali et al., 2025). However, their role as a provider of "provisioning services"—specifically through local food sources—remains underutilized as a primary tourism attraction. This paper explores the potential of mangrove-based food products not just as commodities, but as the centerpiece of a participatory tourism experience: the "Coast-to-Table" model.

The development of the Surabaya Mangrove Botanical Garden, particularly the Gunung Anyar site, is a strategic initiative by the Surabaya City Government to support the 2045 Sustainable Development Goals (SDGs). According to Salsabila & Eprilianto (2025), a comprehensive strategy focusing on the 4A framework (Attraction, Amenity, Access, and Ancillary) is essential to increase visitors' interest. While infrastructure and access have seen steady improvement, there is a critical need for innovative "Attraction" and "Ancillary" components that involve cross-sector collaboration between the government, universities, and the community. Current evidence suggests that while expert consensus has identified essential variables for ecotourism—such as product types and educational activities (Kristianto & Koswara, 2021)—the implementation of these variables into a cohesive, high-value attraction remains limited.

Furthermore, the role of tourist attractions in this ecosystem must be reimagined as a medium for strategic communication. Reswari et al. (2025) argue that attractions are vital tools for building a destination's reputation and delivering environmental conservation values to the public. Without a tangible and engaging medium, the mission of the botanical garden risks being perceived as passive conservation. Integrating local MSMEs (Micro, Small, and Medium Enterprises) into this attraction-based model is equally crucial. Firnanda (2024) highlights that sustainable tourism growth is inextricably linked to the economic empowerment of local SMEs, who require innovative product diversification to attract tourists and ensure the long-term sustainability of the mangrove economy.

In response to these multi-dimensional needs, the "Coast-to-Table" concept is proposed as a solution to bridge the gap between ecological preservation and economic utility. It emphasizes the direct link between the health of coastal ecosystems and the culinary value delivered to the plate (Niu et al., 2024). By utilizing local mangrove species (*Sonneratia caseolaris*) for culinary innovation, the destination can offer a sensory journey that connects visitors to the environmental significance of the wetlands (Sofyana & Refli, 2023). Central to this development is the "Live Cooking Show," an interactive attraction where the technical transformation of mangrove ingredients is demonstrated.

This research employs an Action Research (AR) methodology, involving 24 participants consisting of tourism students and expert lecturers. These participants act as "prospective developers" to evaluate the viability and narrative power of the attraction. By reflecting on the practical experiences at the Surabaya Mangrove Botanical Garden, this study seeks to formulate a holistic model for sustainable gastronomy that enhances local economic value, supports SME resilience, and strengthens the reputation of the botanical garden as a world-class conservation and educational hub.

## 2. LITERATURE REVIEW

This literature review explores the relationship between the ecological functions of mangroves and their potential transformation into economically valuable cultural experiences through the lens of Social-Ecological Systems (SES). Modern mangrove management is no longer viewed as an isolated conservation effort but as an integrated system in which humans and nature interact dynamically (Du et al., 2025). This section provides an in-depth discussion on the classification of mangrove ecosystem services, the shift in valuation from regulating to provisioning functions, and how the "Coast-to-Table" model—incorporating co-creation experiences—can serve as an effective environmental communication tool. Furthermore, this review examines the role of Action Research in tourism education as a methodology to evaluate the feasibility of innovative, community-based tourism products within urban coastal environments.

### 2.1. Mangrove Ecosystem Services and Provisioning Functions

Ecosystem services are defined as the multidimensional benefits that humans obtain from ecosystems, categorized into provisioning, regulating, cultural, and supporting services (Gebrie et al., 2025; Saria et al., 2025). In coastal regions, mangroves have been traditionally recognized and valued for their regulating services, specifically in providing nature-based solutions for wave attenuation, coastal protection, and significant carbon sequestration (Ali et al., 2025; Gomes et al., 2025; van Hespén et al., 2023). While these regulatory functions are vital for climate mitigation, they often lack direct economic visibility for local stakeholders.

However, contemporary discourse has shifted to emphasize provisioning services, particularly the utilization of non-timber forest products (NTFPs) such as edible fruits, leaves, and bioactive compounds (Ruslan et al., 2022; Sofyana & Refli, 2023). This shift is essential for enhancing the well-being of coastal communities by connecting ecological health to economic necessity. According to the Social-Ecological Systems (SES) framework, sustainable mangrove management is achieved when governance models facilitate the delivery of these multifunctional services—merging ecological integrity with social-cultural and intrinsic values (Du et al., 2025).

Furthermore, integrating these provisioning resources into local food systems creates a "Coast-to-Table" pathway that promotes sustainability. As Niu et al. (2024) argue, sustainable food systems require a delicate balance between environmental footprints and consumption. Utilizing mangrove NTFPs for gastronomy tourism not only provides a unique "cultural experience" but also ensures that the ecological integrity remains intact by providing a non-destructive economic alternative to timber extraction. Thus, the provisioning function of mangroves serves as a critical entry point for community-based conservation, where the forest is protected precisely because it is both productive and valuable.

### 2.2. Gastronomy Tourism as a Tool for Sustainable Development

Gastronomy tourism has evolved from a niche market into a primary motivator for travel, where the act of consumption is deeply intertwined with understanding the culture, history, and environment behind the food. Integrating local food products from "wild" or "semi-wild" ecosystems, such as mangroves, into tourism attractions creates a unique Value Proposition that enhances destination allure (Recuero-Virto & Valilla Arróspide, 2024). This strategic interplay between local gastronomy and regional development not only enriches the visitor experience but also reinforces regional identity by leveraging food for branding and growth.

As a sustainable tourism tool, gastronomy can foster a "sense of place" and encourage the preservation of biodiversity by giving it a tangible economic purpose. According to

Almansouri et al. (2026), culinary innovations derived from local heritage are vital for fostering resilience and economic growth while preserving gastronomic traditions. In the context of "wild" resources, Molina-Castillo et al. (2023) emphasize that the gastronomic diversity of forest-origin products must lead to actions aimed at the valorization of food heritage, particularly for urban consumers who are often disconnected from these ecosystems.

However, the sociocultural sustainability of these attractions is complex. While gastronomy tourism can serve as a promising arena for fostering sustainability, its success is mediated by the interplay of stakeholder knowledge and participation (Cheng et al., 2025). Within the Indonesian context, Saputra and Priyambodo (2022) caution that while innovation is necessary to meet tourist expectations, it must be carefully aligned with authentic preferences to avoid eroding the local gastronomic identity. Therefore, the development of mangrove-based gastronomy must prioritize a mindful engagement with food—often referred to as gastronomic slow tourism—which supports environmental stewardship and holistic travel well-being (Chua et al., 2026). By transforming the mangrove forest into a productive gastronomic destination, stakeholders can increase the perceived value of the ecosystem, particularly for "experienter" tourists who prioritize authentic and high-quality culinary encounters (Pérez-Priego et al., 2023).

### 2.3. The Coast-to-Table Model and Co-Creation Experience

The Coast-to-Table model is an adaptation of the Farm-to-Table philosophy, which prioritizes short supply chains and the transparency of food origins. In a coastal context, this model emphasizes the direct journey of resources from the mangrove forest to the visitor's plate. This short supply chain not only ensures freshness but also serves as a sustainable food system that balances environmental footprints with responsible consumption (Niu et al., 2024). By highlighting the "provisioning services" of the mangrove—such as its edible non-timber products—the model provides a tangible economic alternative to destructive practices, thereby ensuring the ecosystem's integrity is maintained because it is perceived as productive and valuable (Du et al., 2025; Sofyana & Refli, 2023).

A key element in modern gastronomy is Co-Creation, where tourists are active participants in the culinary process. In this study, tourism students acting as prospective developers evaluate these co-creative activities to determine their viability in delivering meaningful experiences. According to Polo-Peña et al. (2025), value co-creation in coastal destinations successfully conveys a 'slow destination' image, which significantly enhances tourist well-being. By positioning students as professional evaluators of this well-being, the research captures a dual perspective: the technical feasibility of the Live Cooking Show and its psychological impact on potential visitors. This interactive process transforms the ecosystem's 'provisioning service' into a 'cultural service' (recreation and education), allowing participants to gain a deeper appreciation of nature through sensory engagement.

The effectiveness of this transformation relies on a holistic approach to the five human senses. As argued by Agapito et al. (2014), capturing sensory-informed themes—such as the unique taste of local food and the smell of the coastal environment—is essential for facilitating meaningful and positive tourist experiences. In a "Coast-to-Table" setting, the live demonstration of mangrove-based cooking creates a "culinary enchantment" through sensory stimuli, bridging the gap between ecological conservation and tourism allure (Recuero-Virto & Valilla Arróspide, 2024).

Furthermore, this co-creation activity takes place within a "local space," where tourists and suppliers perform together in the invention of new food offerings (Park & Widyanta, 2022). This collaborative performance expands the destination's gastronomic horizon and

strengthens its regional identity. Taking an ecosystem perspective, this model functions similarly to a "tourism living lab," where structured collaboration among diverse actors—including students, residents, and visitors—is required to facilitate innovation and value co-creation (Dickinger & Kolomoyets, 2024).

However, the success of such co-creation must be balanced with the preservation of authenticity. While innovation is necessary to meet the expectations of "experiential" tourists (Pérez-Priego et al., 2023), it must remain aligned with the local gastronomic heritage to ensure that the sociocultural identity of the region is not eroded (Saputra & Priyambodo, 2024; Cheng et al., 2025). Ultimately, the Coast-to-Table model reimagines travel as a mindful, ethical, and community-centered practice that promotes holistic travel well-being through the principles of gastronomic slow tourism (Chua et al., 2026).

#### 2.4. Action Research in Tourism Education

The implementation of Action Research (AR) in tourism higher education serves as a critical bridge between academic rigor and practical industry innovation. Grounded in a cyclical process of planning, acting, observing, and reflecting, AR facilitates a developmental shift in students from surface-level learners to reflective evaluators of the destination foodscape (Yau et al., 2026). This methodology is particularly effective because it allows students to engage with real-world challenges—such as product standardization and storytelling—while providing professional feedback that aligns with industry standards (Yau et al., 2026).

A significant evolution of AR in this field is the Tourism Living Lab approach. As defined by Dickinger and Kolomoyets (2024), living labs function as physical ecosystems that facilitate value co-creation through parity-based partnerships among students, researchers, and local actors. This structured collaboration is essential for addressing governance gaps in tourism destinations, as it engages the "idea-generation" capabilities of students to resolve complex managerial conflicts (D'Arco et al., 2021). Within this lab-like environment, the tourism destination becomes a space for active experimentation and resource integration.

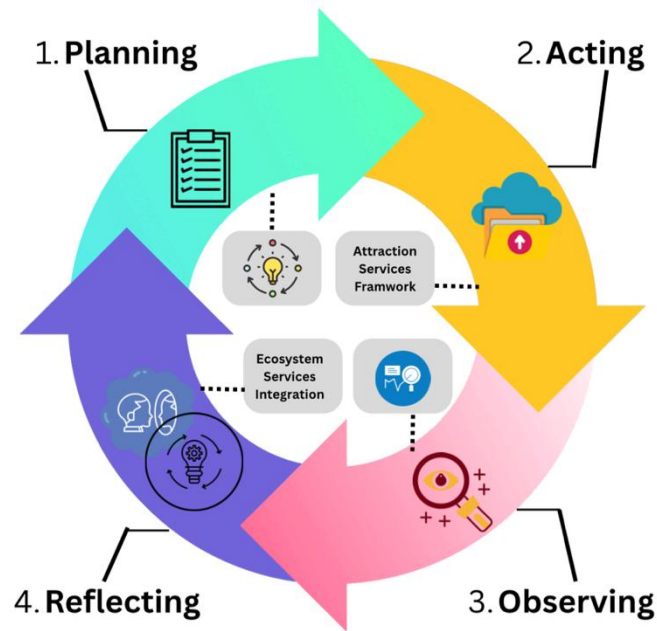
Furthermore, the effectiveness of the Living Lab model is measured by its ability to develop core professional competencies. According to Choe and Kim (2024), students participating in such participatory frameworks show significant growth in professional development, collaboration, and learning agility. This is achieved through qualitative and quantitative evaluative tools, which externalize the students' metacognitive processes (Choe & Kim, 2024; Yau et al., 2026).

Lastly, the success of any educational AR project depends on a holistic system perspective. Alebaki et al. (2025) argue that for participatory research to be sustainable, it must involve a multilevel bridge between scientific research and the community. By analyzing the data through a professional evaluative lens, students ensure that the pedagogical outcomes of the project directly support the innovation and resilience of the mangrove tourism ecosystem (Alebaki et al., 2025). This synergy ensures that the research process not only generates academic knowledge but also contributes directly to the practical development of sustainable food tourism.

### 3. METHODS

This study employs a Participatory Action Research (AR) approach conducted in a single research cycle to systematically evaluate the implementation of a newly designed Coast-to-Table Gastronomy Attraction at the Kebun Raya Mangrove (Mangrove Botanical Garden) Gunung Anyar Surabaya. The research follows the procedural stages of planning, action, observation, and reflection to determine the viability of the model as a professional tourism

product. The research was conducted at Kebun Raya Mangrove Surabaya, involving 22 tourism students from Tourism Departemen of Universitas Pembangunan Nasional “Veteran” Jawa Timur and 4 lecturers as participants. These participants acted as prospective tourism developers and expert evaluators, utilizing their backgrounds to critically assess the attraction's quality, technical execution, and market readiness.



**Figures 1.** Research Model

Source: Processed by authors (2026) adapted from O’Leary & Coghlan (2022)

**Table 1.** Table Conceptual Framework Coast-to-Table

No	Action Cycle	Indicator	Action Focus
1	Planning	Attraction Design: Determining the uniqueness and the flow of the attraction.	Designing mangrove-based recipes, cooking sequences, and educational narratives.
2	Acting	Technical Execution: Testing the professional standards of the product.	Live cooking demonstration & workshop featuring interactive student 'co-cooking' sessions.
3	Observing	Ecosystem Services: Measuring the effectiveness of environmental messaging.	Observing participant engagement and documenting the activity flow.
4	Reflecting	Marketability & Viability: Assessing commercial readiness.	Analysis of Likert-scale questionnaires and stakeholder reflective discussions.

Source: Processed by authors (2026), based on the Action Research framework by O’Leary and Coghlan (2022)

The research flow, as illustrated in Figure 1, began with the Planning stage, where researchers designed the Coast-to-Table flow, focusing on the integration of mangrove-based ingredients into a professional live cooking show and workshop, including recipes and "ecosystem services" narratives. In the Action stage, the attraction was executed through a live demonstration and an interactive "co-cooking" session. During the Observation stage, engagement levels and the communication of environmental values were documented.

Finally, the Reflection stage involved a formal evaluative session where participants provided quantitative feedback via a Likert-scale questionnaire and qualitative insights through reflective discussions.

Data were collected using a structured questionnaire based on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) measuring three key dimensions: Attraction Design, Ecosystem Services Integration, and Marketability. Quantitative data from 15 students and 5 lecturers were analyzed using descriptive statistics to determine the Viability Index across these three dimensions. Meanwhile, the qualitative feedback—including suggestions for weekend scheduling and the innovative use of mangrove syrup as a substitute for rum—was analyzed through thematic analysis to refine the final model and formulate strategic development recommendations.

#### 4. RESULTS AND DISCUSSION

The implementation of the Action Research at the Surabaya Mangrove Botanical Garden demonstrates the high viability of the "Coast-to-Table" model as a strategic tourism attraction. The following sections present a synthesis of quantitative evaluations and qualitative observations, highlighting how the transformation of mangrove provisioning services into a co-creation experience serves as a potent environmental communication tool. By analyzing dimensions of design, technical execution, and marketability, this discussion explores the synergy between culinary innovation and ecosystem conservation in a botanical garden setting.

##### 4.1. Result

The results of the single-cycle Action Research conducted at the Surabaya Mangrove Botanical Garden are categorized into four key dimensions based on the evaluation by 20 tourism students and 4 lecturers. Quantitative analysis, as summarized in Table 1, indicates that the Ecosystem Services Integration dimension achieved the highest mean score of 4.61, proving that the 'Coast-to-Table' narrative effectively linked mangrove conservation with local food security. The Attraction Design and Technical Execution dimensions followed with scores of 4.53 and 4.48 respectively, reflecting the high quality of the visual performance and the efficiency of the cooking sequences. Meanwhile, Marketability received a strong score of 4.42, resulting in an overall total average of 4.51, which is interpreted as highly viable.

**Table 2.** Summary of Gastronomy Attraction Evaluation (n=24)

No	Dimension	Indicators	Mean Score	Interpretation
1	Attraction Design	Uniqueness, Visual Appeal, Interaction	4.53	Very Strong
2	Technical Execution	Cooking Sequence, Duration, Tool Proficiency	4.48	Very Strong
3	Ecosystem Services	Narrative, Environmental Value, Sustainability	4.61	Very Strong
4	Marketability & Viability	Commercial Readiness, Replicability, Regional Image	4.42	Very Strong
Average (Mean)			4.51	Highly Viable

Note: 1.00-1.80 (Very Weak), 1.81-2.60 (Weak), 2.61-3.40 (Moderate), 3.41-4.20 (Strong), 4.21-5.00 (Very Strong).

In the action and observation stage, several key findings were recorded regarding the implementation at the Surabaya Mangrove Botanical Garden. Participants exhibited high curiosity during the "Co-Cooking" session, specifically when observing the transformation of raw mangrove fruit (*Sonneratia caseolaris*) into culinary ingredients, which effectively challenged the common perception that mangrove fruit is inedible. Furthermore, the transition from explaining mangrove roots as a physical ecosystem service to the production of mangrove-based desserts created a tangible educational bridge, making abstract conservation concepts more accessible and meaningful. The entire technical flow of the live cooking session was executed within an efficient timeframe, successfully maintaining audience enthusiasm and focus from the initial preparation to the final tasting session.



**Figure 2.** Co-Creation Live Cooking Show & Workshop by MSMEs Actors

*Source: Author's documentation*

The reflection stage provided deeper qualitative insights for model refinement based on feedback from both students and expert evaluators. A significant technical innovation highlighted was the use of mangrove syrup as a substitute for rum, which not only strengthened the "halal" and local wisdom aspects of the attraction but also served as a unique selling point that increased the overall value. Expert evaluators suggested that for future development, the attraction should be scheduled consistently on weekends to capture the on-site tourist market at the Gunung Anyar site and integrated with the Mangrove Innovation Product Gallery to enhance professional credibility. Ultimately, there is a strong consensus that the model is ready to be packaged as a premium eco-gastronomy experience, focusing on sensory storytelling and experiential tourism that targets visitors interested in environmental sustainability and authentic local flavors.

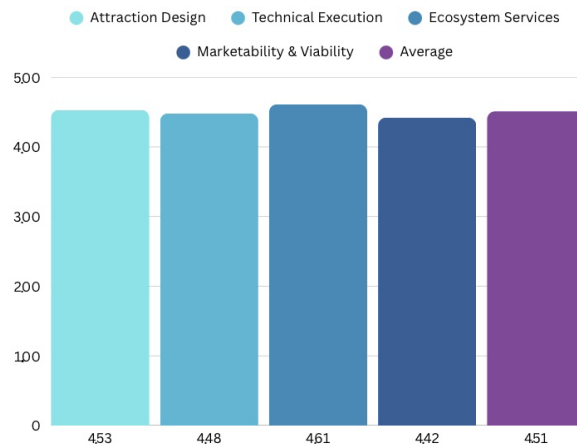


**Figure 3.** Live cooking flambé technique utilizing mangrove syrup as a substitute for rum in a Banana Split dish.

*Source: Author's documentation*

## 4.2. Discussion

The results of the Action Research conducted at the Surabaya Mangrove Botanical Garden are presented through a synthesis of quantitative data derived from evaluation questionnaires and qualitative field observations during the attraction's implementation. The assessment focused on four primary viability dimensions: Attraction Design, Technical Execution, Ecosystem Services Integration, and Marketability. Overall, the "Coast-to-Table" gastronomy model achieved a cumulative mean score of 4.51 on a 5.00-point scale, categorizing the model as Highly Viable for development as a professional tourism attraction. The distribution of scores across each dimension is visually represented in the bar chart in Figure 4:



**Figure 4.** Mean scores of viability dimensions for the Coast-to-Table gastronomy attraction model at the Surabaya Mangrove Botanical Garden (n=24)

*Source: Primary data*

As illustrated in the figure, while all dimensions performed within a very strong range, the Ecosystem Services Integration emerged as the primary strength of the attraction. A detailed breakdown of the indicators for each dimension is further elaborated in the following subsections:

### 4.2.1. Patterns of Symbolic Meaning and Social Function of Traditional Pastries

The exceptional score in the Ecosystem Services dimension (4.61) confirms that the Coast-to-Table model serves as a potent vehicle for environmental communication. Traditionally, the Surabaya Mangrove Botanical Garden has been perceived primarily through its regulating services, such as coastal protection and carbon sequestration (Ali et al., 2025; van Hespén et al., 2023). However, this research demonstrates that by highlighting provisioning services — specifically edible non-timber forest products (NTFPs) — through a live cooking show and workshop, the ecosystem's value becomes more personal and tangible. This is in line with Reswari et al. (2025), who suggest that attractions should function as communication media to deliver environmental values and build a destination's reputation. The transition from explaining mangrove roots to tasting a mangrove-based dessert creates a "culinary enchantment" that bridges the gap between abstract conservation and sensory consumption (Recuero-Virto & Arróspide, 2024).

### 4.2.2. Dynamics of Tradition, Social Change, and Globalization

A pivotal finding in this Action Research is the role of technical innovation in fostering value co-creation. The use of mangrove syrup as a substitute for rum emerged as a critical

technical success that resonates with the need for authentic yet innovative culinary products (Almansouri et al., 2026). This substitution not only addresses the "halal" requirements of the local context but also reinforces the regional identity of the Surabaya Mangrove Botanical Garden without eroding its gastronomic heritage (Saputra & Priyambodo, 2022). Furthermore, the interactive "Co-Cooking" session allowed tourism students, acting as prospective developers, to transition from surface-level learners to reflective evaluators (Yau et al., 2026). Their engagement with raw *Sonneratia caseolaris* challenged previous perceptions of inedibility, suggesting that co-creation is vital for building "product trust" in unconventional food sources.

#### 4.2.3. Marketability and Professional Service Design

While the Marketability score was very strong (4.42), it was the lowest among the dimensions, indicating that the transition from a pedagogical exercise to a commercial product requires meticulous "service design." This need for professional design aligns with the 4A development strategy (Attraction, Amenity, Access, and Ancillary) discussed by Salsabila & Eprilianto (2025) to increase visitor interest. As prospective developers, students and expert evaluators noted that justifying a premium price point requires standardized "food-grade" presentation and professional branding (Niu et al., 2024). Moreover, integrating these attractions with MSME activities is essential, as Firnanda (2024) emphasizes that sustainable development in this area must increase the role of SMEs in attracting tourists. The suggestion to integrate the attraction with the Mangrove Innovation Product Gallery reflects the necessity of a "Tourism Living Lab" approach to bridge the gap between innovation and commercial viability.

#### 4.2.4. Action Research Reflection: Implications for Sustainable Tourism

The single-cycle Action Research successfully validates that integrating gastronomy into coastal conservation areas is a highly viable strategy for sustainable development. By positioning the Surabaya Mangrove Botanical Garden as a space for active experimentation, this study provides a blueprint for how "gastronomic slow tourism" can foster environmental stewardship and holistic travel well-being (Chua et al., 2026). The "Coast-to-Table" model proves that sustainable tourism can move beyond passive observation into an active, sensory-filled experience. Ultimately, the high viability index (4.52) suggests that when provisioning services are transformed into professional cultural attractions, the perceived value of the ecosystem increases, ensuring that the forest is protected precisely because it is perceived as an innovative and productive landscape (Du et al., 2025).

## 5. CONCLUSION

This research successfully demonstrates that the Coast-to-Table model is a highly viable strategy for developing mangrove-based gastronomy attractions, as evidenced by an overall viability index of 4.51. Through a single-cycle Action Research conducted at the Surabaya Mangrove Botanical Garden, it was found that the integration of Live Cooking Shows significantly enhances the perception of mangroves as a source of provisioning services, with this dimension achieving the highest score of 4.61. The study confirms that transforming raw *Sonneratia caseolaris* into a professional culinary performance, highlighted by the innovative use of mangrove syrup as a substitute for rum, creates a unique and educational value proposition that aligns with the principles of "halal" and local wisdom.

The involvement of 20 tourism students and four expert lecturers as reflective evaluators provided critical professional insights that bridge the gap between academic innovation and industry readiness. The high scores across all dimensions—Attraction Design, Technical

Execution, Ecosystem Services, and Marketability—indicate that the model is ready for broader implementation as a "Premium Eco-Gastronomy" experience. Ultimately, the success of this attraction lies in the co-creation process, where the interactive engagement between the demonstrator and the participants transforms the mangrove forest from a protected conservation area into a productive, sensory, and meaningful landscape that fosters a deeper commitment to coastal stewardship.

Based on the reflection stage of this Action Research, several strategic recommendations are proposed for the management of the Surabaya Mangrove Botanical Garden and future gastronomy developers:

- a. **Standardization and Professional Branding:** To transition from an educational prototype to a commercial tourism product, there is a critical need for standardized service design. This includes implementing food-grade packaging, professional branding, and refined storytelling techniques that emphasize the "Coast-to-Table" journey and ensure consistent quality across all performances.
- b. **Strategic Scheduling and Integration:** It is recommended that the gastronomy attraction be scheduled consistently on weekends to effectively capture the on-site tourist market at the Gunung Anyar site. Furthermore, the attraction should be physically and narratively integrated with the Mangrove Innovation Product Gallery to enhance its professional credibility and commercial reach.
- c. **Community Capacity Building:** Future development should focus on training local community members in gastronomy storytelling and "showmanship." Empowering locals as demonstrators will ensure the sociocultural sustainability of the attraction while providing direct economic benefits to the coastal population around the botanical garden.
- d. **Policy and Digital Integration:** Destination managers should formally integrate gastronomy attractions into the master plan of the Surabaya Mangrove Botanical Garden as a core educational feature. This should be supported by digital storytelling tools, such as QR-code-linked narratives, to maintain transparency in the supply chain and increase the attraction's marketability to modern, tech-savvy "experienter" tourists.

## 6. ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the Research and Community Service Institute (LPPM) of Universitas Pembangunan Nasional "Veteran" Jawa Timur for providing financial support for this research under the Assignment Agreement Letter Number SPP/205/UN.63.8/LT/IX/2025.

Special thanks are also extended to the management of the Surabaya Mangrove Botanical Garden, particularly the staff at the Gunung Anyar site, for their collaboration and for providing the venue and facilities necessary for the "Coast-to-Table" Gastronomy Attraction implementation. Furthermore, the authors would like to thank the students and lecturers who participated as evaluators, whose professional insights were invaluable to the completion of this study.

## 7. REFERENCES

- Agapito, D., Valle, P., & Mendes, J. (2014). The sensory dimension of tourist experiences: Capturing meaningful sensory-informed themes in Southwest Portugal. *Tourism Management*, 42, 224-237. <https://doi.org/10.1016/j.tourman.2013.11.011>
- Alebaki, M., Kladou, S., & Szolnoki, G. (2025). Engaging stakeholders and communities in wine

- tourism education: experiences from an international collaboration. *International Journal of Wine Business Research*, 37(4), 790-809. <https://doi.org/10.1108/IJWBR-09-2024-0058>
- Almansouri, M., Bajrai, M. W., Al Sarraj, M. M., Al Muhanna, M., Mohamed, H. A., Alshammari, G. M., Alhelal, A., & Hakeem, M. J. (2026). Culinary innovation, sustainable agriculture, and gastronomic heritage in Northern Saudi Arabia: Pathways toward food security, tourism, and vision 2030. *International Journal of Gastronomy and Food Science*, 43, Article 101396. <https://doi.org/10.1016/j.ijgfs.2025.101396>
- Ali, S., Dey, G., Nuong, N. H. K., Rahman, A., Wang, L. C., Sukul, U., Das, K., Sharma, R. K., Wang, S. L., & Chen, C. Y. (2025). Carbon sequestration in mangrove ecosystems: Sources, transportation pathways, influencing factors, and its role in the carbon budget. *Earth-Science Reviews*, 269, Article 105184. <https://doi.org/10.1016/j.earscirev.2025.105184>
- Cheng, D., Wu, Y., Zhou, J., & Zhou, Y. (2025). Rethinking the socio-cultural sustainability of gastronomy tourism: A Critical Tourism Studies lens. *International Journal of Gastronomy and Food Science*, 42, Article 101370. <https://doi.org/10.1016/j.ijgfs.2025.101370>
- Choe, Y., & Kim, N. (2024). From the classroom to the Living Lab for developing competencies in tourism higher education. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 35, Article 100511. <https://doi.org/10.1016/j.jhlste.2024.100511>
- Chua, B. L., Han, H., & Fakfare, P. (2026). Gastronomic slow tourism as a pathway to holistic travel well-being. In Reference Module in Social Sciences. *Elsevier*. <https://doi.org/10.1016/B978-0-443-27698-9.00045-3>
- D'Arco, M., Lo Presti, L., Marino, V., & Maggiore, G. (2021). Is sustainable tourism a goal that came true? The Italian experience of the Cilento and Vallo di Diano National Park. *Land Use Policy*, 101, Article 105198. <https://doi.org/10.1016/j.landusepol.2020.105198>
- Dickinger, A., & Kolomoyets, Y. (2024). Value co-creation in tourism living labs. *Journal of Business Research*, 183, Article 114820. <https://doi.org/10.1016/j.jbusres.2024.114820>
- Du, Y., Lin, L., & Su, J. (2025). Applying the social-ecological systems (SES) framework for sustainable mangrove management: A case study of Quanzhou Bay, China. *Ocean & Coastal Management*, 269, Article 107860. <https://doi.org/10.1016/j.ocecoaman.2025.107860>
- Firnanda, D. T. A. (2024). Strategi pengembangan pariwisata Kebun Raya Mangrove Gunung Anyar dalam meningkatkan keberlanjutan ekosistem dan ekonomi UKM Surabaya Jawa Timur. *Jurnal Ekonomi Manajemen Bisnis dan Akuntansi (JEMBATAN)*, 2(2). <https://doi.org/10.62383/jembatan.v2i2.1784>
- Gebrie, A., Mohan, M., Karpowicz, D. A., Roy, A. D., Varsha, V., Zambrano, J., Ewane, E. B., Watt, M. S., Macreadie, P. I., Jaffar, A., Calders, K., Dutt, S., Broadbent, E. N., Selvam, P. P., Jaafar, W. S. W. M., Zabbey, N., Kasak, K., & Hendy, I. (2025). Potential benefits of biodiversity corridors for fragmented mangrove ecosystems. *Biological Conservation*, 310, Article 111309. <https://doi.org/10.1016/j.biocon.2025.111309>
- Gomes, V. J. C., Achete, F. M., de Freitas, P. P., Lima e Silva, W. K., Guerrero Martin, C. A., Queiroz, E. V., de Sá Guerreiro, J., Asp, N. E., Siegle, E., & Correa, E. S. (2025). Nature-based solutions implications for the eastern Amazon Coastline: The role of mangrove in coastal protection. *Regional Studies in Marine Science*, 84, Article 104129. <https://doi.org/10.1016/j.rsma.2025.104129>
- Kristianto, D. H., & Koswara, A. Y. (2021). Arahana pengembangan kawasan ekowisata mangrove Gunung Anyar Surabaya. *Jurnal Teknik ITS*, 10(2), D111-D116. <http://dx.doi.org/10.12962/j23373539.v10i2.72370>
- Molina-Castillo, S., Espinoza-Ortega, A., Thomé-Ortiz, H., & Moctezuma-Pérez, S. (2023). Gastronomic diversity of wild edible mushrooms in the Mexican cuisine. *International*

- Journal of Gastronomy and Food Science*, 31, Article 100652. <https://doi.org/10.1016/j.ijgfs.2022.100652>
- Niu, H., Li, Z., Zhang, C., & Li, M. (2024). Sustainable food systems under environmental footprints: The delicate balance from farm to table. *Science of The Total Environment*, 954, Article 176761. <https://doi.org/10.1016/j.scitotenv.2024.176761>
- O'Leary, D. and Coghlan, D. (2022). *Action Research in Hospitality and Tourism Research*. Bingley: Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80117-546-320221016>
- Park, E., & Widyanta, A. (2022). Food tourism experience and changing destination foodscape: An exploratory study of an emerging food destination. *Tourism Management Perspectives*, 42, Article 100964. <https://doi.org/10.1016/j.tmp.2022.100964>
- Pérez-Priego, M. A., García-Moreno García, M. B., Jara-Alba, C., & Caro-Barrera, J. R. (2023). Local gastronomy as a destination tourist attraction: The case of the 'Chiringuitos' on the Costa del Sol (Spain). *International Journal of Gastronomy and Food Science*, 34, Article 100822. <https://doi.org/10.1016/j.ijgfs.2023.100822>
- Polo-Peña, A. I., Peco-Torres, F., Frías-Jamilena, D. M., & Coves-Martínez, Á. L. (2025). The moderating effect of tourism type on the co-creation of a "slow destination" image and on tourist well-being. *Journal of Hospitality and Tourism Insights*, 8(11), 294-314. <https://doi.org/10.1108/JHTI-02-2025-0271>
- Recuero-Virto, N., & Valilla Arróspide, C. (2024). Culinary destination enchantment: The strategic interplay of local gastronomy in regional tourism development. *International Journal of Gastronomy and Food Science*, 36, Article 100931. <https://doi.org/10.1016/j.ijgfs.2024.100931>
- Reswari, F. A., Inayah, S. A., & Ramadhan, M. I. (2025). Atraksi wisata sebagai media dalam pengembangan reputasi ekowisata: Studi kasus dua Kebun Raya di Jawa Timur. *RELASI: Jurnal Penelitian Komunikasi*, 5(4).
- Ruslan, N. F. N., Goh, H. C., Hattam, C., Edwards-Jones, A., & Moh, H. H. (2022). Mangrove ecosystem services: Contribution to the well-being of the coastal communities in Klang Islands. *Marine Policy*, 144, Article 105222. <https://doi.org/10.1016/j.marpol.2022.105222>
- Saputra, F. A., & Priyambodo, T. K. (2024). Sustainable heritage gastronomic tourism: A qualitative exploration of Inkgung-Guwosari domestic tourist preferences. *The Journal Gastronomy Tourism*, 11(2). <https://doi.org/10.17509/gastur.v11i2.75553>
- Salsabila, F. S., & Eprilianto, D. F. (2025). Strategi peningkatan daya tarik pengunjung wisata oleh Dinas Ketahanan Pangan dan Pertanian Kota Surabaya (Studi pada pengembangan Kebun Raya Mangrove Gunung Anyar). *Jurnal Ilmu Administrasi Negara*, 13(1).
- Saria, A. E., Li, X., Dubi, A., Mgalula, M. E., & Du, J. (2025). Spatio-temporal land use change and loss of mangrove forest in two coastal cities in Tanzania and the perceived implications on provisioning of ecosystem services. *Ocean & Coastal Management*, 263, Article 107604. <https://doi.org/10.1016/j.ocecoaman.2025.107604>
- Sofyana, N. T., & Refli, R. (2023). Pemanfaatan ekosistem mangrove dalam pembuatan produk bioteknologi: Mini review [Utilization of mangrove ecosystems on producing biotechnology products: A mini review]. *Journal of Tropical Upland Resources*, 5(2), 10–18. <https://doi.org/10.29244/jtur.5.2.10-18>
- van Hespen, R., Hu, Z., Borsje, B., De Dominicis, M., Friess, D. A., Jevrejeva, S., Kleinhans, M. G., Maza, M., van Bijsterveldt, C. E. J., Van der Stocken, T., van Wesenbeeck, B., Xie, D., & Bouma, T. J. (2023). Mangrove forests as a nature-based solution for coastal flood protection: Biophysical and ecological considerations. *Water Science and Engineering*,

16(1), 1–13. <https://doi.org/10.1016/j.wse.2022.12.001>

Yau, Y., Shen, Y. C., & Hooi, L. B. (2026). Leveraging human pose estimation for diagnostic feedback: Action research on instructional mediation and sustainable learning in coach education. *Acta Psychologica*, 263, Article 106128. <https://doi.org/10.1016/j.actpsy.2025.106128>