

**CONCEPTUALIZING ECO-GASTRONOMY FOR SOCIO-ECOLOGICAL
RESILIENCE: THE CASE OF BALI, INDONESIA**

**KONSEPTUALISASI ECO-GASTRONOMI UNTUK KETAHANAN SOSIO-
EKOLOGIS: STUDI KASUS BALI, INDONESIA**

Bondan Pambudi¹, I Made Darsana²

Institut Pariwisata dan Bisnis Internasional, Indonesia^{1,2}

bondan.pambudi@ipb-intl.ac.id¹

ABSTRACT

Bali's tourism economy has become increasingly vulnerable to ecological degradation and disasters such as the 2025 Bulana Lau flood and landslide. This study examines how eco-gastronomy, the integration of food culture, ecology, and sustainability ethics, can serve as a framework for fostering ecological and social resilience. Methods: A qualitative, interpretive design was employed using a library-based analytical approach. Literature, institutional reports, and contextual data from the Bulana Lau disaster were analyzed through conceptual mapping, cross-regional comparison, and analytical generalization informed by resilience theory and Tri Hita Karana philosophy. Results Findings show that eco-gastronomy strengthens resilience through five mechanisms: environmental stewardship, economic diversification, social capital, adaptive innovation, and equitable benefit distribution. Upland Bangli communities illustrate stronger adaptive capacity than Bali's coastal mass-tourism areas. Discussion and Conclusion Eco-gastronomy in Bali forms a hybrid model of cultural-ecological resilience aligned with SDGs 2, 11, 12, and 13, offering a transferable framework for sustainable tourism and environmental recovery.

Keywords: Eco-Gastronomy; Resilience Theory; Tri Hita Karana; Sustainable Tourism

ABSTRACT

Ekonomi pariwisata Bali semakin rentan terhadap degradasi ekologi dan bencana alam seperti banjir dan longsor Bulana Lau pada tahun 2025. Studi ini mengeksplorasi bagaimana ekogastronomi, integrasi antara budaya makanan, ekologi, dan etika keberlanjutan, dapat berfungsi sebagai kerangka kerja untuk meningkatkan ketahanan ekologi dan sosial. Metode: Desain kualitatif interpretatif digunakan dengan pendekatan analitis berbasis perpustakaan. Literatur, laporan institusional, dan data kontekstual dari bencana Bulana Lau dianalisis melalui pemetaan konseptual, perbandingan antarwilayah, dan generalisasi analitis yang didasarkan pada teori ketahanan dan filsafat Tri Hita Karana. Hasil Temuan menunjukkan bahwa ekogastronomi memperkuat ketahanan melalui lima mekanisme: pengelolaan lingkungan, diversifikasi ekonomi, modal sosial, inovasi adaptif, dan distribusi manfaat yang adil. Komunitas pegunungan Bangli menunjukkan kapasitas adaptif yang lebih kuat dibandingkan dengan kawasan pariwisata massal pesisir Bali. Diskusi dan Kesimpulan Ekogastronomi di Bali membentuk model hibrida ketahanan budaya-ekologis yang selaras dengan Tujuan Pembangunan Berkelanjutan (SDGs) 2, 11, 12, dan 13, menawarkan kerangka kerja yang dapat diterapkan untuk pariwisata berkelanjutan dan pemulihan lingkungan.

Kata kunci: Ekogastronomi; Teori ketahanan; Tri Hita Karana; Pariwisata berkelanjutan

INTRODUCTION

Bali's identity as a global tourism hub has long depended on its lush landscapes, vibrant cultural traditions, and intricate subak irrigation system that symbolizes harmony between people and nature. Yet, this equilibrium is increasingly threatened by rapid urbanization, mass tourism, and climate-induced hazards. Over the past decade, Bali has lost an estimated 2,500 hectares of rice fields annually to tourism

infrastructure and real estate development, leading to soil erosion, declining water retention, and heightened flood vulnerability (Gokkon, 2024; Kondo, 2022). The 2025 Bulana Lau flood and landslide in Bangli, which devastated farmland and displaced rural communities, revealed how ecological imbalance and economic dependency on mass tourism exacerbate both environmental and social fragility. These events highlight the urgent need for a

development paradigm that goes beyond sustainability rhetoric to foster resilience within Bali's socio-ecological system.

Eco-gastronomy, an emerging field that integrates food, culture, and ecology, offers a potential framework for this transformation. Originating from the global "slow food" movement, eco-gastronomy emphasizes locally sourced, seasonal, and ethically produced foods as a means of restoring balance between human consumption and environmental limits (Elsehely & Abdelrady, 2024; Tourism, 2023). Beyond its culinary dimension, eco-gastronomy represents a socio-ecological ethic that links everyday food practices with broader systems of sustainability. In Bali, this ethic resonates deeply with *Tri Hita Karana*, the indigenous philosophy of harmony among humans (*pawongan*), nature (*palemahan*), and the divine (*parahyangan*). While eco-gastronomy has been explored in relation to sustainable food tourism and rural livelihoods globally (Fontefrancesco, 2023; Padyala & Kallu, 2025), its role as a framework for ecological and social resilience remains underexamined, particularly in non-Western, island-based contexts where cultural and environmental systems are tightly interwoven.

This study addresses that gap by conceptualizing eco-gastronomy as a resilience framework within Bali's evolving tourism landscape. Specifically, it pursues two interconnected aims: (1) to theorize how eco-gastronomic values and practices can foster ecological and social resilience by linking sustainability ethics, food culture, and community adaptation; and (2) to interpret the Bulana Lau flood and landslide as an empirical lens through which the relevance of eco-gastronomic principles for sustainable tourism and environmental recovery can be

understood. Rather than describing the disaster itself, the analysis uses it to reveal the practical and moral implications of eco-gastronomy in rebalancing human–environment relations.

The paper proceeds in three parts. The first situates eco-gastronomy within resilience theory, political ecology, and Balinese cosmology to establish its conceptual foundation. The second explores the Bulana Lau case as an interpretive reflection of how eco-gastronomic principles operate during crisis and recovery. The final section synthesizes theoretical and practical insights, emphasizing the policy relevance of eco-gastronomy as a culturally grounded model of sustainability. Through this lens, the paper argues that eco-gastronomy represents not merely a culinary trend but a transformative pathway toward cultural–ecological resilience, positioning Bali as a living laboratory for integrating local wisdom with global sustainability frameworks.

RESEARCH METHODS

This study employs a qualitative, interpretive design using a library-based analytical approach (Jaakkola, 2020; Snyder, 2019). The objective is to conceptualize eco-gastronomy as a framework for ecological and social resilience in Bali and to interpret its relevance through the 2025 Bulana Lau flood and landslide. Because the inquiry centers on theoretical integration rather than empirical measurement, interpretation is the main analytical tool. Concepts are examined as evolving constructs embedded in Bali's cultural and ecological systems, allowing an exploration of how food practices, sustainability ethics, and community adaptation interact.

The study draws on three categories of sources (Snyder, 2019). First, peer-reviewed literature on eco-gastronomy, resilience theory, political ecology, and sustainable tourism (2015–2025) from Scopus and Web of Science journals provides the conceptual base. Second, institutional and policy documents from UNWTO, UNESCO, the Indonesian Ministry of Tourism, and the Bali Environment Agency inform the governance and sustainability context. Third, verified disaster and environmental reports concerning the Bulana Lau event serve as a contextual lens to illustrate how eco-gastronomic values could operate in recovery scenarios. These materials are interpreted comparatively and thematically rather than statistically. The analysis proceeds in three steps: (1) mapping theoretical domains such as sustainability ethics, resilience theory, and *Tri Hita Karana* to identify shared principles of adaptation and balance; (2) synthesizing global cases, Tuscany, Okinawa, and Jeju, to clarify Bali's distinct hybrid model; and (3) interpreting the Bulana Lau case through analytical generalization to demonstrate the framework's practical relevance. Triangulation across academic, policy, and contextual sources ensures conceptual validity, while the use of multiple theoretical perspectives strengthens interpretive rigor (Snyder, 2019). As a conceptual study, this research does not aim for statistical representativeness but for analytical insight transferable to other island and tourism-dependent contexts. The Bulana Lau case is treated as an illustration, not a dataset. Within these limits, the design enables a coherent theoretical articulation of eco-gastronomy as a culturally grounded strategy for resilience and sustainable tourism in Bali (Jaakkola, 2020).

RESULTS AND DISCUSSIONS

Theoretical Interpretation: Eco-Gastronomy and Resilience in Bali

Eco-gastronomy is understood as a holistic approach that integrates food, culture, and ecology to promote sustainability. It emphasizes preparing food using traditional, often organic techniques, and explicitly considers human health and environmental protection (Elsehly & Abdelrady, 2024). In practice, eco-gastronomy links local agricultural production with tourism experiences (e.g. “farm-to-table” dining, culinary festivals) so that tourists participate in the destination's cultural reality and support its natural resource base (Elsehly & Abdelrady, 2024; Tourism, 2023). International bodies now recognize gastronomy tourism as a driver of sustainable development: the UN World Tourism Organization highlights that “gastronomy tourism can play a leading role in promoting responsible agricultural practices, protecting biodiversity and reducing the environmental footprint” while creating opportunities for communities to “protect their heritage and traditions” and diversify local economies (Tourism, 2023). Thus, an eco-gastronomic framework goes beyond mere cuisine to encompass the entire socio-ecological food system, aligning cultural preservation with ecological stewardship (Elsehly & Abdelrady, 2024; Tourism, 2023).

Viewed through resilience theory, eco-gastronomy fosters social-ecological resilience by diversifying livelihoods and reinforcing community networks. Resilience, the capacity of a socio-ecosystem to absorb disturbance and reorganize while retaining its essential identity, is enhanced when tourism is diversified and embedded in local culture (Ruiz-Ballesteros & del

Campo Tejedor, 2020). Community-based tourism models show that linking visitors to multiple sectors (agriculture, cuisine, crafts) creates a buffer against shocks, supporting recovery after crises (Ruiz-Ballesteros & del Campo Tejedor, 2020). In Bali, eco-gastronomy can be conceptualized as a resilience strategy because it promotes local food production (strengthening food security), retains economic benefits in rural areas, and encourages environmentally friendly farming. Indeed, recent analysis in Bangli regency finds that eco-gastronomy “represents a sustainable pathway... to overcome the challenges posed by over-tourism, while fostering a more inclusive and diversified economy,” connecting culture, agriculture, and tourism to drive post-crisis recovery and long-term industry sustainability (ibabahasa.or.id). In this sense, eco-gastronomy embodies the adaptive diversification and local engagement that resilience theory prescribes for tourism-dependent communities (Ruiz-Ballesteros & del Campo Tejedor, 2020).

Importantly, eco-gastronomy resonates with Bali’s own Tri Hita Karana philosophy, which mandates harmony among humans, nature, and the spiritual realm. By explicitly valuing agricultural landscapes and culinary heritage, an eco-gastronomic framework echoes Tri Hita Karana’s ethic of ecological balance (Centre, 2012; Institute, 2025; Saputro et al., 2024). UNESCO notes that Bali’s traditional subak irrigation system “reflects the philosophical concept of Tri Hita Karana, which brings together the realms of the spirit, the human world and nature” (Centre, 2012). Similarly, agroecological practices in Bali (and neighboring Tengger communities) strive to “maintain harmony between humans, nature, and the spiritual realm”

by combining ritual, biodiversity conservation, and farming (Ambayoen et al., 2024; Saputro et al., 2024). Framing tourism through eco-gastronomy thus dovetails with local spiritual-cultural values, reinforcing sacred respect for the land and food systems. In this light, eco-gastronomy can serve as a *cultural bridge* that brings Balinese concepts (e.g. Tri Hita Karana) into practical tourism and planning models, just as it incorporates global “slow food” principles (Elsehely & Abdelrady, 2024).

From a political ecology perspective, adopting an eco-gastronomic framework also addresses power relations in resource use. Political ecology analyzes how social power shapes environmental outcomes, for example, tourism expansion can monopolize land and water at the expense of farmers. Bali’s recent floods have drawn attention to exactly such dynamics: officials noted that only 4% forest cover remains in parts of upland Bali, much lost to land-use change (Team, 2025). The Environment Minister has warned against converting agricultural lands for tourism, noting a need to “restore” land-use function and prevent continued loss of farms (Team, 2025). Eco-gastronomy, by revalorizing agriculture and local food enterprises, implicitly challenges these inequities. It encourages multi-stakeholder governance (farmers, community temples, businesses and government), akin to the Pentahelix model, so that local producers share authority over food resources. In this way, eco-gastronomy can mitigate the unsustainable land and water conversion highlighted by political-ecological studies of Bali, fostering more equitable and sustainable governance of Bali’s socio-ecological systems (Cole, 2012; Team, 2025).

Comparative literature from other island and rural contexts demonstrates

that eco-gastronomy operates as a global mechanism for social-ecological resilience. In Tuscany, Italy, studies reveal that traditional foodways and short agrifood chains serve as crucial instruments for sustaining rural livelihoods and ecological stewardship (Fontefrancesco, 2023). Farm-to-table systems, culinary festivals, and local cooperative networks strengthen producer–consumer relations and regenerate cultural landscapes. Yet, researchers also note that over-commercialization may erode authenticity, prompting calls for balanced policy frameworks that align gastronomy tourism with environmental protection (Mrozek, 2023). Italian experience shows that gastronomy can be integrated into national recovery strategies, supporting SDGs 2, 8, 12, and 15 as a cohesive development pathway (Padyala & Kallu, 2025). This parallels Bali’s attempt to leverage food culture for post-crisis rural revitalization, though within a Southeast Asian rather than European governance setting.

In Okinawa, Japan, eco-gastronomic practice is institutionalized through community-based agreements and voluntary conservation regimes. The *Conservation and Use Agreement (CUA)* framework illustrates how local authorities and tourism operators co-create ecological standards rooted in communal values, enabling a self-regulating system of sustainable tourism (Tanaka et al., 2022). Comparative analyses with Jeju highlight that Okinawa’s longevity culture, centered on plant-based diets and slow lifestyles, embodies a living example of resilience derived from food, health, and environment interdependence (Oh & Kim, 2023). These findings resonate strongly with *Tri Hita Karana*, suggesting that Bali’s eco-gastronomic future could similarly be governed

through participatory, health-oriented, and culturally grounded tourism models.

In Jeju, South Korea, eco-gastronomy is intertwined with cultural resilience and gendered heritage. The *Haenyeo* women divers represent a socio-ecological archetype where livelihood, marine conservation, and spirituality converge (Shaikh, 2024). However, research warns that increasing mass tourism and uneven governance threaten both habitat integrity and cultural continuity (Hong et al., 2021; Li et al., 2021). Behavioral models from Jeju further show that environmentally responsible tourist behavior depends on internalized norms and social motivation rather than external regulation (Lin et al., 2025). For Bali, this underscores that cultivating ecological awareness among visitors must accompany community empowerment, two dimensions necessary for sustaining sacred landscapes like subak and highland farms.

Synthesizing these cross-regional lessons reveals a consistent global pattern: eco-gastronomy enhances island resilience when it is locally governed, culturally embedded, and ecologically adaptive. Tuscany highlights the economic-policy dimension of agrifood sustainability; Okinawa exemplifies the social-governance model of collaborative tourism; and Jeju illustrates the cultural-spiritual pathway of resilience. Bali, integrating *Tri Hita Karana* with agroforestry and culinary heritage, can thus be positioned not as a unique anomaly but as part of a broader “global island resilience paradigm”, where food, faith, and environment form a synergistic triad for sustainable futures.

Case Reflection: The Bulana Lau Flood and Landslide

The Bulana Lau flood and landslide exemplify the vulnerabilities that arise

when local food–environment connections are overlooked. In September 2025, extreme rainfall triggered flash floods and dozens of landslides across Bali, causing loss of life and widespread damage (Garut, 2025; Team, 2025). In Bali’s agricultural uplands (e.g. near Lake Batur and Kintamani), deforestation and land conversion exacerbated runoff, while hardened surfaces in built-up zones impeded infiltration. In the Bangli–Kintamani area (within which Bulana Lau lies), officials note that dense development and loss of forest cover heighten flood risks; for instance, fewer than 1,200 ha of the 49,000 ha of river basin in Bangli remain forested (Team, 2025). This condition reflects precisely the breakdown of the ecological balance that eco-gastronomy and Tri Hita Karana seek to prevent.

In the aftermath of the disaster, community response and recovery illustrate the relevance of eco-gastronomic principles. Relief efforts heavily relied on local food networks: public kitchens and banjar (village) kitchens served thousands of evacuees daily (Team, 2025). Traditional marketplaces, damaged by floods, were prioritized for reopening, underscoring the importance of local food trade for social cohesion. These observations mirror eco-gastronomic tenets: in times of crisis, robust local food systems and communal solidarity (hallmarks of eco-gastronomy) sustain people. Indeed, Balinese cultural practice already leans this way. Prior to the disaster, many farmers in Bali’s highlands integrated agroforestry and diversified crops (e.g. coffee, fruit, rice) as part of Tri Hita Karana stewardship (Ambayoen et al., 2024). Such practices would have mitigated the landslide severity: as Ambayoen et al. note for nearby Tengger farmers, agroforestry “balances forest

conservation and economic benefits” while honoring spiritual harmony. The Bulana Lau event thus confirms that where those eco-gastronomic/THK-aligned practices have been eroded, the system’s resilience is weakened.

From a tourism perspective, Bulana Lau’s disruption highlights how an eco-gastronomic strategy could aid recovery and future planning. The flood curtailed mass-tourism circuits in the impacted regions, but it also opened opportunities. As Pambudi *et al.* discuss for Bangli, promoting alternative tourism (e.g. visits to off-peak farm areas, gastronomy tours) can “distribute tourist activity more evenly across the region, reducing environmental strain” on overburdened sites (sidebahasa.or.id). In Bulana Lau’s context, guiding (Ambayoen et al., 2024) visitors to local coffee plantations, fruit orchards, and farmhouse-stays would not only help revive the economy, but also incentivize conservation of the very landscapes that failed to buffer the disaster. For example, scheduling culinary festivals that feature rematriated crops or subak rites could mobilize community involvement and preserve indigenous crops. This aligns with international experiences in resilient tourism: community-based culinary tourism in island contexts (e.g. Galápagos) is known to improve socio-ecological resilience by diversifying income and reinforcing traditional agricultural practices (Ruiz-Ballesteros & del Campo Tejedor, 2020). Although focused on a flood event, the Bulana Lau case therefore illustrates that embedding eco-gastronomic principles (local sourcing, cultural food heritage, agroecosystem conservation) can guide both immediate recovery and longer-term sustainable tourism development.

The contrast between upland Bangli and Bali’s coastal tourism centers illustrates how eco-gastronomic

practices shape socio-ecological resilience in tangible, measurable ways. Bangli's agro-tourism economy, anchored in local farming, food-based tourism, and community markets, proved far more adaptive during the COVID-19 crisis than the coastal mass-tourism model. When global travel halted, Badung Regency, home to Kuta and Nusa Dua, suffered a severe economic contraction of, 16.52%, the steepest decline in Bali (Putri & Mahaendra, 2022). In comparison, Bangli, which maintained diversified livelihoods through agro-tourism, saw only a, 4.10% decline in regional GDP (Putri & Mahaendra, 2022). According to Bank Indonesia, agriculture was the *only* sector to show growth during the pandemic, while tourism and services collapsed (Firdaus, 2020). One Bangli tour guide, forced to pivot to onion farming, earned nearly IDR 60 million in three months, demonstrating the role of agriculture as a resilience backbone when global tourism fails (Firdaus, 2020). In coastal areas, where dependence on foreign visitors is structurally entrenched, communities lacked such fallback mechanisms, delaying recovery and deepening vulnerability.

Social and cultural dynamics further underscore this divergence. In Bangli, eco-gastronomic values coexist with strong customary institutions and collective ethics such as *gotong royong*, which became pivotal during crisis. As tourism workers returned to their home villages, they reintegrated into agrarian life, revitalizing farming and community food systems. Local leaders described this as a rediscovery that "Bali is not only tourism, agriculture too can sustain life if taken seriously" (Firdaus, 2020). Such solidarity facilitated spontaneous mutual-aid networks: food-sharing programs and communal kitchens

organized through *banjar* and traditional villages (Pramono & Juliana, 2025). Conversely, coastal settlements like Tembok in Buleleng, more dependent on the tourism economy, struggled to rebuild social cohesion after mass unemployment, initiating collective farming projects only as emergency safety nets (Firdaus, 2020). These observations suggest that where eco-gastronomy and local agriculture are weak, community resilience must be rebuilt deliberately, while agrarian regions like Bangli maintain adaptive capacity more organically.

Environmental outcomes provide the third axis of contrast. Eco-gastronomic regions such as Bangli, emphasizing agro-tourism and subak-based land use, tend to preserve their ecological buffers, forest margins, water catchments, and agricultural terraces. In contrast, mass-tourism coastal zones face accelerating ecological degradation. Studies indicate Bali loses about 2,500 ha of rice fields annually to villa and hotel development, fragmenting irrigation systems and destabilizing soil (Firdaus, 2020; Kondo, 2022). Such conversion increases runoff and erosion, heightening flood and landslide risks downstream. Meanwhile, roughly 22% of Bali's coastline is now categorized as highly vulnerable to erosion, storm surges, and tidal flooding due to overbuilt tourism infrastructure (Gokkon, 2024). In this context, Bangli's maintained agricultural landscape functions as a natural disaster buffer, reducing exposure and preserving hydrological balance. Coastal zones, on the other hand, are trapped in an ecological paradox, expanding tourism infrastructure that simultaneously undermines the very environment it depends upon.

Taken together, these contrasts reveal that eco-gastronomy in Bangli is

not a cultural ornament but a functional resilience system. By sustaining local food production, preserving ecological assets, and reinforcing social solidarity, Bangli demonstrates a holistic model of adaptive capacity. Coastal Bali, emblematic of globalized mass-tourism economies, exemplifies the inverse: economic growth tied to environmental degradation and social fragility. This empirical differentiation validates the theoretical claim that eco-gastronomy can operationalize resilience by diversifying livelihoods and embedding tourism within the socio-ecological fabric of place. In policy terms, it implies that resilience-building for tourism regions must move beyond crisis response toward systemic reintegration of agriculture, culture, and ecology, the triad already embodied in Bali's *Tri Hita Karana* philosophy.

Eco-gastronomy operates through concrete causal pathways that strengthen community resilience to environmental and socio-economic shocks. The first mechanism lies in environmental preservation as risk mitigation. Eco-gastronomic ethics, favoring local, seasonal, and organic production, directly incentivize ecosystem conservation. In upland agro-tourism zones such as Bangli, the maintenance of farmland and forest buffers allows higher rainfall absorption and soil stability, reducing the probability and severity of floods and landslides. By contrast, coastal zones dominated by mass tourism have experienced rapid conversion of arable land into resorts, intensifying erosion and coastal inundation risks (Firdaus, 2020; Kondo, 2022). In this sense, eco-gastronomy *causally lowers hazard exposure* by sustaining the ecological services that function as natural protection systems.

The second mechanism involves economic diversification and food

security, which cushion households during crises. By linking tourism to local agriculture, eco-gastronomy distributes income sources across multiple sectors. Empirical data from Bali show that Bangli's mixed agro-tourism economy contracted only, 4.10% during the COVID-19 shock, compared with, 16.52% in Badung's coastal tourism centers (Putri & Mahaendra, 2022). Agriculture was the only sector to remain positive, providing livelihoods and local food supply when tourism collapsed (Firdaus, 2020). Communities engaged in local food production can meet subsistence needs immediately after disasters, avoiding dependence on disrupted external supply chains. Thus, diversification and local provisioning *reduce vulnerability ex-ante* and *accelerate recovery ex-post*.

A third mechanism is social capital and local institutional strength, embedded in eco-gastronomic practice. Community-based tourism cooperatives, farmers' groups, and *subak* networks cultivate trust, reciprocity, and organizational routines that become critical during emergencies. Villages maintaining strong adat systems mobilized collective kitchens, resource sharing, and coordinated evacuations more effectively during crises (Pramono & Juliana, 2025). These behaviors are not incidental correlations; they emerge causally from daily cooperation within agricultural and culinary systems. Where such networks exist, collective response time shortens, and recovery logistics become endogenous rather than externally imposed.

The fourth mechanism concerns innovation and adaptive capacity. Eco-gastronomy encourages creative, place-based entrepreneurship, from processing local crops to marketing virtual culinary experiences. During the pandemic, Balinese village tourism groups rapidly

shifted to online product sales and virtual cooking tours (Pramono & Juliana, 2025). This capacity for rapid innovation represents an institutionalized form of learning and flexibility, allowing communities to generate new income channels while physical tourism halts. Adaptation therefore becomes a continuous process rather than a post-crisis reaction, directly speeding recovery trajectories.

Finally, equitable benefit distribution constitutes the fifth causal pathway. Because eco-gastronomy engages many local actors, farmers, artisans, homestay owners, cooks, and guides, economic gains circulate broadly within the community. Inclusive distribution ensures that more households retain resources to absorb shocks and rebuild, avoiding dependency on a few large investors whose collapse could cripple the entire economy. Studies confirm that equity and participation are decisive determinants of community recovery capacity (Pramono & Juliana, 2025). In eco-gastronomic systems, mutual economic interdependence translates into mutual assistance during crises, strengthening both moral and material resilience.

In synthesis, the comparative evidence from Bangli and coastal Bali demonstrates that eco-gastronomy functions as a causal system, not merely a cultural ideal. Through environmental stewardship, diversified livelihoods, robust social networks, adaptive innovation, and fair economic distribution, eco-gastronomic values systematically lower disaster risk and accelerate post-crisis regeneration. Communities that embed tourism within ecological, economic, and social resilience. Conversely, neglect of these values correlates with structural fragility. Eco-gastronomy therefore represents a

practical resilience architecture in which culture, economy, and nature interact causally to produce sustainable recovery pathways.

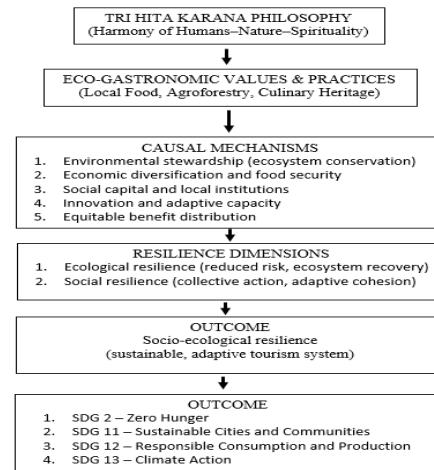


Figure 1. Model Conceptual model of eco-gastronomy for socio-ecological resilience in Bali

The model positions eco-gastronomic values, rooted in the Tri Hita Karana philosophy, as the central driver of resilience. Through five causal mechanisms (environmental stewardship, economic diversification, social capital, innovation, and equity), eco-gastronomy fosters both ecological and social resilience. Together, these generate a holistic socio-ecological resilience system aligned with the Sustainable Development Goals (2, 11, 12, and 13).

Practical Implications and Policy Insights

The above reflections suggest concrete applications. First, land-use and agricultural policy must reinforce eco-gastronomic goals. Bali's leadership has already signaled this: the national Environment Minister advocated avoiding further conversion of farmland, and even hinted at a moratorium on new development to protect water catchments (Team, 2025). An explicit eco-gastronomy policy would build on such directives by designating agricultural

zones for high-value food crops (e.g. organic coffee, heirloom rice) tied to tourism experiences. For instance, the provincial government could incentivize subak associations to supply hotels and restaurants, or offer tax breaks to eateries that use a certain percentage of locally sourced ingredients. These measures echo UNWTO-recommended strategies to “strengthen agriculture, gastronomy and tourism” in tandem (Tourism, 2023) and to view food-led tourism as an engine for rural resilience (Tourism, 2023).

Second, tourism planning should integrate cultural-food education. Curricula for hospitality and guiding programs can include Tri Hita Karana and agroecology, training providers to interpret Bali’s food traditions for visitors. Promotion of “farm-to-fork” circuits and cooking classes using indigenous crops would create demand for sustainable farming. Local governance (banjar and adat villages) could play roles in certification: for example, a “Subak Garden-to-Table” label could guarantee that restaurants and stalls contribute to watershed health (through responsible irrigation practices) and use minimally processed local produce. Such participatory, multi-stakeholder models reflect both the Pentahelix approach advocated in Bali’s sustainable tourism literature and community-based tourism practices worldwide (Tourism, 2023).

Third, disaster preparedness and recovery protocols should leverage food culture. The Bulana Lau floods highlighted how critical food distribution is in emergencies. In preparation, authorities could map community kitchens and farm holdings to ensure redundancy: if a primary road is cut, alternative local food sources (e.g. upland vegetable gardens, rice stocks, community granaries) can be activated.

At the same time, recovery funding can prioritize agricultural rehabilitation, for example, replacing rice swamps or replanting native trees on eroded hillsides. These actions align with eco-gastronomy’s emphasis on the productivity and sustainability of the land. International examples offer guidance: regions recovering from floods (in Europe and Asia) have successfully linked short-term relief to long-term food-system resilience by forming farmer cooperatives that serve both markets and disaster relief needs. In Bali, similar community-based co-ops could supply safe, local meals to both residents and tourists, reinforcing solidarity and livelihood at once.

Eco-gastronomy in Bali offers a distinctive theoretical contribution that advances the understanding of resilience in sustainable tourism. Unlike models from Tuscany, Okinawa, or Jeju that emphasize either ecological adaptation or community governance, the Balinese experience demonstrates a hybrid form of cultural–ecological resilience that unites indigenous cosmology with global sustainability theory. Rooted in *Tri Hita Karana*, the philosophy of harmony among humans, nature, and the divine, Bali’s approach positions cultural spirituality as a living governance system. This philosophy does not merely function as a symbolic tradition but as a practical framework shaping environmental stewardship, food systems, and tourism development. The model shows that indigenous environmental ethics can be systematically embedded into modern resilience design, thus expanding the scope of resilience theory to include spiritual ecology and cultural capital as causal dimensions of adaptive capacity, elements rarely articulated in conventional socio-ecological discourse.

At a conceptual level, this hybrid model redefines the relationship between gastronomy, sustainability, and disaster resilience. In Bali, gastronomy is not viewed simply as a cultural attraction or economic sector but as an integrative resilience architecture where ecological balance, social solidarity, and cultural continuity reinforce one another. By transforming culinary practices and agricultural systems into mechanisms of adaptation, Bali bridges the global sustainability discourse with local epistemologies, forming what may be termed a *glocal sustainability paradigm*. This paradigm demonstrates that global frameworks such as the United Nations Sustainable Development Goals (SDGs) can be effectively localized through indigenous philosophies that already embody the principles of sustainability and equilibrium.

The Balinese eco-gastronomy framework directly aligns with four key SDGs. It contributes to SDG 2 (Zero Hunger) through the revitalization of local agriculture and the enhancement of food sovereignty. It supports SDG 11 (Sustainable Cities and Communities) by promoting community-based tourism models and spatial planning that preserve agro-ecological landscapes. It advances SDG 12 (Responsible Consumption and Production) through local sourcing, seasonal diets, and circular food economies that minimize environmental footprints. Finally, it reinforces SDG 13 (Climate Action) by sustaining agroforestry systems that act as carbon sinks and by reducing dependence on imported food supply chains that generate significant emissions. These intersections illustrate that eco-gastronomy operates as a practical sustainability mechanism, not merely a cultural label or lifestyle trend.

In integrating indigenous philosophy with the operational logic of

the SDGs, Bali's model demonstrates that culture itself can function as a driver of sustainability and resilience. This theoretical innovation reframes resilience as an ongoing process of co-evolution among ecological, social, and spiritual systems rather than as a reactive capacity to external shocks. By institutionalizing *Tri Hita Karana* in policies such as local sourcing incentives, subak-based certifications, and cooperative-based tourism enterprises, the Balinese experience transforms cultural wisdom into measurable governance instruments. As such, eco-gastronomy in Bali contributes a transferable model of *culturalized resilience*, showing how localized moral-ecological systems can generate globally relevant solutions for sustainable development.

Finally, ongoing monitoring and research should be embedded in tourism management. Policymakers might establish performance indicators that track the ecological footprint of culinary tourism: e.g., percentage of restaurant inputs from certified local farms, area of land under agroecological management, or tourism revenues returned to farming communities. This data-driven approach mirrors global "sustainability certification" movements and responds to calls from organizations like UNESCO to quantify the maintenance of cultural landscapes (as with the subak) (Tourism, 2023). By systematically evaluating how well eco-gastronomy is practiced, Bali's tourism board and environment agencies can adapt strategies and ensure that cultural food heritage and ecosystem health remain central to the island's resilience.

In summary, conceptualizing eco-gastronomy as a framework for Bali means recognizing that food, from farm to festival, can unite ecological management and social welfare. The

Bulana Lau disaster underscores this connection: the collapse of natural systems (floods, landslides) and the disruption of livelihoods both reflect and affect Bali's tourism resilience. By interpreting such events through the lens of eco-gastronomy and Tri Hita Karana, stakeholders gain insight into sustainable pathways. International forums now explicitly endorse this vision, combining local tradition with innovation, as essential for responsible tourism and community resilience (Ruiz-Ballesteros & del Campo Tejedor, 2020). For Bali, the way forward lies in nurturing the island's rich culinary and agricultural legacy as a source of strength, ensuring that future tourism development is as much about preserving harmony with nature as it is about welcoming visitors.

Results should be clear and concise, which provides interpretations of the data analysis summary (descriptive and inferential). Sufficient details must cover the use and justification of certain statistical analysis as well as description and interpretation of results, the latter of which cover both the confirmed or rejected hypotheses of the current research. There are tables / figures / diagrams / parts of transcripts interview to be provided if any. Furthermore, Discussion section is placed after the results are presented and it elaborates the significance of the results for both the current and prior relevant research. Do not restate the findings reported nor add additional reports not stated earlier.

CONCLUSION AND SUGGESTION

The study concludes that eco-gastronomy in Bali represents a hybrid model of cultural–ecological resilience that unites indigenous philosophy, sustainability ethics, and community adaptation within a single socio-

ecological framework. It demonstrates that food systems, when grounded in Tri Hita Karana values of harmony among humans, nature, and the divine, can function as practical instruments for environmental preservation, social solidarity, and adaptive recovery. The analysis of the Bulana Lau flood and comparative evidence from Bangli and coastal regions show that eco-gastronomic practices, through environmental stewardship, livelihood diversification, social cooperation, innovation, and equitable benefit distribution, directly lower disaster risk and accelerate post-crisis regeneration. This integrative model extends resilience theory by incorporating spiritual ecology and cultural capital as causal dimensions of adaptive capacity, offering an alternative to growth-driven tourism paradigms that erode ecological stability. In policy terms, eco-gastronomy provides a culturally rooted yet globally relevant strategy that aligns with SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).

REFERENCES

- Ambayoen, M. A., Hidayat, K., Yuliati, Y., & Cahyono, E. D. (2024). The Roots of Resilience: Strengthening Agricultural Sustainability in Tengger, Indonesia Through Social Capital. *Sustainability*, 17(1), 192. <https://doi.org/10.3390/su17010192>
- Centre, U. W. H. (2012). Cultural Landscape of Bali Province: the Subak System as a Manifestation of the Tri Hita Karana Philosophy. *UNESCO World Heritage List*. <https://whc.unesco.org/en/list/1194/>

- Cole, S. (2012). A political ecology of water equity and tourism. *Annals of Tourism Research*, 39(2), 1221–1241.
<https://doi.org/10.1016/j.annals.2012.01.003>
- Elsehely, H., & Abdelrady, M. (2024). Green Restaurants as a Tool to Develop Eco-gastronomy Tourism in the Egyptian Destination. In *Archaeology, and Hospitality (IJTAH)* (Vol. 4, Issue 1).
- Firdaus, F. (2020). “Bali is not only about tourism”: Covid-19 prompts rethink for island’s residents. *The Guardian*.
<https://www.theguardian.com/global-development/2020/aug/01/bali-is-not-only-about-tourism-covid-19-prompts-rethink-for-islands-residents>
- Fontefrancesco, M. (2023). Traditional food for a sustainable future? exploring vulnerabilities and strengths in Italy’s foodscape and short agrifood chains. *Sustainable Earth Reviews*, 6, 1–13.
<https://doi.org/10.1186/s42055-023-00056-5>
- Garut, R. S. (2025). Bali Dilanda 120 Titik Banjir dan 18 Longsor, Korban Jiwa Capai Belasan Orang. *Suara Garut*.
<https://suaragarut.id/bali-dilanda-120-titik-banjir-dan-18-longsor-korban-jiwa-capai-belasan-orang/>
- Gokkon, B. (2024). Bali’s rapid coastal erosion threatens island’s ecosystems & communities: Study. *Mongabay*.
<https://news.mongabay.com/2024/06/balis-rapid-coastal-erosion-threatens-islands-ecosystems-communities-study/>
- Hong, H., Kim, C.-K., Lee, H. W., & Lee, W.-K. (2021). Conservation, Restoration, and Sustainable Use of Biodiversity Based on Habitat Quality Monitoring: A Case Study on Jeju Island, South Korea (1989–2019). *Land*.
<https://doi.org/10.3390/land10080774>
- Institute, A. S. (2025). How Balinese Mitigate the Effects of Climate Change on Food Security. *Samdhana Institute*.
<https://samdhana.org>
- Jaakkola, E. (2020). Designing conceptual articles: four approaches. *AMS Review*, 10(1), 18–26.
<https://doi.org/10.1007/s13162-020-00161-0>
- Kondo, S. (2022). A global food crisis calls for soil resilience. *Climate & Capital Media*.
<https://www.climateandcapitalmedia.com/a-global-food-crisis-calls-for-soil-resilience/>
- Li, X., Kim, J., & Lee, T. (2021). Collaboration for Community-Based Cultural Sustainability in Island Tourism Development: A Case in Korea. *Sustainability*.
<https://doi.org/10.3390/su13137306>
- Lin, Y., Yoon, J.-H., & Xiao, G. (2025). Promoting Sustainable Island Tourism Through Tourists’ Environmentally Responsible Behavior: Integrating VIP, VAB, and TPB. *Sustainability*.
<https://doi.org/10.3390/su17114792>
- Mrozek, M. (2023). Travels and Sustainable Tourism in Italy. Selected Dilemmas. *Journal of Environmental Management and Tourism*.
[https://doi.org/10.14505/jemt.v14.5\(69\).21](https://doi.org/10.14505/jemt.v14.5(69).21)
- Oh, Y. J., & Kim, N. S. (2023). An Exploratory Comparative Study on Jeju and Okinawa as Healthy and

- Longevity Cities. *Taegu Science University Defense Security Institute*.
<https://doi.org/10.37181/jscs.2023.7.5.131>
- Padyala, M., & Kallu, S. (2025). Gastronomy Tourism and the United Nations Sustainable Development Goals (UNSDGs): A Thematic Literature Review. *International Journal For Multidisciplinary Research*.
<https://doi.org/10.36948/ijfmr.2025.v07i03.44730>
- Pramono, R., & Juliana, J. (2025). Beyond Tourism: Community Empowerment and Resilience in Rural Indonesia. *Tourism and Hospitality*, 6(4), 210.
<https://doi.org/10.3390/tourhosp6040210>
- Putri, M. D. P., & Mahaendra, Y. I. N. (2022). Bali's Economic Transformation Based on a Sustainable Agricultural Sector. *Eurasia: Economics & Business*, 7(61).
https://econeurasia.com/issue-2022-07/article_02.pdf
- Ruiz-Ballesteros, E., & del Campo Tejedor, A. (2020). Community-Based Tourism as a Factor in Socio-Ecological Resilience. Economic Diversification and Community Participation in Floreana (Galapagos). *Sustainability*, 12(11), 4724.
<https://doi.org/10.3390/su12114724>
- Saputro, B. A., Adha, M., & Ulmi, S. A. (2024). Preserving Harmony in Bali: An Environmental Philosophy Approach to Tackling Over-tourism. *Digital Press Social Sciences and Humanities*, 11, 00004.
<https://doi.org/10.29037/digitalpress.411456>
- Shaikh, M. (2024). A Comprehensive Study on the Haenyo of Jeju Island: Tradition, Sustainability, and Women's Empowerment. *International Journal For Multidisciplinary Research*.
<https://doi.org/10.36948/ijfmr.2024.v06i01.12322>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339.
<https://doi.org/10.1016/j.jbusres.2019.07.039>
- Tanaka, T., Tiku, O., & Takashina, N. (2022). Empowering voluntary approaches for environmental sustainability and resilient communities: a case study from Okinawa, Japan. *Discover Sustainability*, 3.
<https://doi.org/10.1007/s43621-022-00094-7>
- Team, B. U. E. (2025). Poor Land Use Policies Blamed for Bali's Floods. *Bali Discovery*.
<https://www.balidiscovery.com/poor-land-use-policies-blamed-for-balis-flood>