

Valuing Urban Agriculture in Indonesia: Cultural Ecosystem Services and Willingness to Pay in Rapidly Urbanizing Cities

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ABSTRACT: Urban agriculture (UA) is increasingly recognized as a vital strategy for enhancing urban resilience, social equity, and ecological sustainability, particularly in rapidly urbanizing regions such as Indonesia. This study aims to evaluate the willingness to pay (WTP) for urban ecosystem services, with a particular focus on cultural and provisioning services delivered by UA in Indonesian cities. Using the Contingent Valuation Method (CVM), a structured survey was administered to assess public preferences and economic valuation of UA benefits. Logistic regression analysis was employed to identify the socio economic predictors of WTP. In addition, qualitative literature and comparative case studies were integrated to contextualize valuation findings within broader socio political and environmental frameworks. The results reveal strong public support for UA, with higher WTP values associated with cultural ecosystem services, particularly those linked to heritage, aesthetics, and community identity. Key predictors of WTP include income, education, environmental concern, and prior exposure to UA. Furthermore, regional differences highlight the role of cultural and policy contexts in shaping valuation outcomes. Discussion emphasizes the methodological limitations of CVM in capturing intangible values and advocates for mixed methods approaches that incorporate ethnographic and participatory tools. International case studies from cities such as Medellín, Bangkok, and Shanghai provide policy insights for effective UA integration, highlighting the importance of inclusive planning, cross sector collaboration, and legal recognition of UA practices. In conclusion, UA offers a multidimensional solution to urban challenges in Indonesia, providing environmental, cultural, and social co benefits. The study recommends embedding UA into participatory urban planning and leveraging valuation data to support equitable policy design.

Keywords: Urban Agriculture, Ecosystem Services, Willingness To Pay, Cultural Ecosystem Services, Contingent Valuation Method, Indonesia, Sustainable Urban Planning.



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INTRODUCTION

Rapid urbanization in Indonesian metropolitan centers such as Jakarta, Surabaya, and Bandung has accelerated the conversion of green spaces into built infrastructure. This transformation has degraded ecosystem functions, reduced biodiversity, and worsened urban challenges such as

flooding and heat island effects, disproportionately impacting vulnerable populations. In this context, balancing urban growth with ecological sustainability has become a pressing policy issue.(Förster et al., 2019).

Urban planning practices in Indonesia have historically prioritized economic growth and physical infrastructure development, often at the expense of green infrastructure preservation and integration. The result is a misalignment between ecological sustainability goals and the spatial realities of urban expansion (Getzner & Islam, 2020). Despite growing awareness of the importance of ecosystem services, green space continues to be undervalued in cost benefit analyses guiding city planning, and the ecological and social co benefits of green infrastructure remain insufficiently internalized in development frameworks.

In response to these challenges, urban agriculture (UA) has gained momentum in Southeast Asian cities as an alternative land use model that can provide essential ecosystem services (ES) while addressing food security, land scarcity, and socio ecological integration. Urban agriculture refers to the cultivation, processing, and distribution of food within urban and peri urban areas, and it takes multiple forms, including vertical farms, rooftop gardens, household food production, and community managed plots (Whitham et al., 2015). These practices contribute directly to sustainable urban development by enhancing local food systems, reducing the environmental footprint of food transport, and strengthening community ties (Duan et al., 2016). In many instances, urban agriculture projects are integrated into broader planning policies and community development strategies, reinforcing their relevance to both urban ecology and public well being (Pouso et al., 2020).

Urban agriculture contributes to urban resilience and sustainability by delivering multiple ecosystem services. These include provisioning services, such as food production, income generation, and job creation; regulating services, such as temperature moderation, stormwater management, and air purification; and cultural services, such as recreational opportunities, cultural heritage, spiritual fulfillment, and aesthetic enrichment (Yang et al., 2023). By offering such diverse benefits, urban agriculture plays a crucial role in restoring urban ecological functions, improving the quality of life, and building cities that are both livable and environmentally responsible. Notably, the spatial embedding of UA within communities increases local environmental stewardship, fosters neighborhood identity, and supports informal learning networks focused on sustainability.

However, cultural ecosystem services (CES) including recreation, cultural identity, and psychological well-being remain undervalued in both academic and policy contexts. In Indonesia, UA holds potential to reinforce cultural continuity and provide spaces for interaction and environmental learning, yet these values are rarely incorporated into urban planning (Agustriani et al., 2023).

Urban agriculture is slowly gaining traction within Indonesian policy discourse, with municipalities such as Jakarta and Yogyakarta introducing localized support for UA through urban zoning and public health campaigns. However, significant barriers continue to impede wider implementation.

These include limited land tenure security for urban farmers, inconsistent legal frameworks, inadequate municipal funding, and low institutional capacity for implementation and monitoring (Dobbs et al., 2021; Jarvis et al., 2017). While some cities have identified specific land for UA development, the uptake has been patchy, and coordination across sectors and government levels remains weak (Dobbs et al., 2018). Without strong policy support and public investment, the transformative potential of urban agriculture may remain unrealized.

Simultaneously, the valuation of cultural ES has yet to be adequately mainstreamed into planning and governance frameworks, especially in developing country contexts. The inherent complexity of measuring cultural values coupled with methodological constraints has resulted in a reliance on proxy indicators or the outright omission of CES in environmental assessments (Arias-Arévalo et al., 2018). In many cases, planners and economists favor services that are more easily monetized, such as food production or climate regulation. This bias marginalizes the deeply rooted cultural dimensions of land and ecosystem use, particularly in the Global South, where intangible values like spiritual connection, oral traditions, and collective memory are embedded in everyday landscape practices (Sharma et al., 2021).

This study addresses these gaps by assessing urban residents' willingness to pay (WTP) for urban agriculture that provides both cultural and provisioning services in Jakarta, Bandung, and Yogyakarta. Using the Contingent Valuation Method (CVM), the study examines socio-economic and attitudinal predictors of WTP. By focusing on CES valuation, this research contributes to ecosystem service economics and provides practical evidence for integrating CES into planning and policy. The objective is to support inclusive and contextually relevant strategies for urban sustainability in Indonesia.

METHOD

This study was conducted in three Indonesian cities: Jakarta, Bandung, and Yogyakarta. These urban centers were strategically selected to represent a cross section of geographic, economic, and cultural diversity across Indonesia. Jakarta, as the national capital and Indonesia's largest city, faces acute urbanization pressures, spatial fragmentation, and limited green infrastructure. It represents a critical case of complex land use conflicts and social inequality in environmental access. Bandung, a mid-sized city, is well known for its community led green movements and active participation in urban greening projects, including pilot initiatives in rooftop and vertical farming. Yogyakarta, characterized by its cultural richness and semi urban typology, has maintained more traditional community based urban agriculture practices and provides a compelling contrast to the hyper urbanized environments of Jakarta. Together, these cities provide a comprehensive backdrop for evaluating urban agriculture's socio ecological role in contemporary Indonesian urbanism.

Primary data were collected through an internet-based survey conducted between March and April 2025, involving 1,200 respondents (400 per city: Jakarta, Bandung, and Yogyakarta). Respondents were recruited via online panels, stratified by age, income, and education to ensure representativeness. The questionnaire followed best practices for the Contingent Valuation Method (CVM), including text-based descriptions, visual aids, and practical scenarios to minimize hypothetical bias. Willingness to pay (WTP) was elicited using a dichotomous choice format, followed by an open-ended maximum contribution question. Additional variables measured included socio-demographics, prior exposure to urban agriculture, environmental concern, and perceived benefits of green infrastructure. Secondary data such as census statistics and municipal policy reports were also consulted to validate representativeness and contextualize findings (Wahyuningrum et al., 2021).

The CVM was applied to capture non market values of cultural and provisioning ecosystem services (ES) provided by urban agriculture. The valuation scenario proposed a policy supported program to expand community based UA across neighborhoods. The payment vehicle a modest community development levy was selected for its perceived realism and similarity to existing civic fees, enhancing acceptability and internal validity (Boyse et al., 2023). Survey pre testing included expert reviews, cognitive interviews, and a pilot with 60 respondents, which identified and corrected potential misunderstandings, overly technical language, and unrealistic assumptions. These iterative refinements helped align the valuation task with respondents' cognitive capacities and real world experience. Moreover, careful attention was given to phrasing neutrality to avoid anchoring or protest bias (Ryan et al., 2019). The final instrument ensured that respondents understood both the service being valued and the payment context.

Sampling was conducted through a quota based online panel managed by a national research firm, ensuring proportional representation across gender, income tiers, education levels, and geographic zones within each city. While online surveys pose risks of selection bias, this method allowed access to a diverse respondent base within logistical constraints. Compared to convenience sampling, quota sampling improved demographic alignment and enhanced the external validity of results (Anderson et al., 2023). Survey reliability was reinforced through embedded validation checks, such as attention filters, time thresholds, and logic consistency tests (Miller et al., 2020). Responses that failed these checks were excluded from the final dataset. Additionally, we compared sample characteristics with census data to confirm alignment. The online format was selected to enable rapid deployment, cost effectiveness, and broad geographic reach, though it excluded individuals without internet access, an acknowledged limitation.

Data were analyzed using binary logistic regression to model the probability of WTP (coded as 1) versus non-WTP (coded as 0). Predictor variables included age, gender, income, education, city, prior UA exposure, and environmental concern. Logistic regression was selected because it accommodates non-linear relationships and is widely applied in CVM studies to explore behavioral determinants. Model robustness was tested using multicollinearity diagnostics ($VIF < 5$), Hosmer-Lemeshow goodness-of-fit, and nested model comparisons. Marginal effects were also computed to interpret the change in probability associated with predictor variables. This approach aligns with

the study objective of identifying socio-economic and attitudinal drivers of WTP (Abate et al., 2020).

RESULT AND DISCUSSION

Descriptive Statistics

Survey participants reflected a diverse and demographically rich cross section of urban Indonesian society, offering nuanced insights into the socio economic characteristics shaping urban agriculture (UA) engagement. The majority of respondents were aged between 25 and 45 years, a finding that corresponds with international UA studies, where this demographic represents the most active contributors to and advocates for sustainable urban food systems (Ryen & Svensson, 2014). A significant number of participants had completed at least a high school education, while a noteworthy proportion had obtained university degrees in environmental sciences, urban planning, or social sciences (Mostafa & Al-Hamdi, 2016). This suggests a relatively informed and environmentally literate respondent base.

Gender distribution across the cities was balanced, although Yogyakarta displayed a slight female majority, which aligns with global research emphasizing women's disproportionate involvement in grassroots agricultural and environmental movements (Makwinja et al., 2019). Many participants (approximately 58%) identified as members of community groups, and around 36% had direct experience in gardening, either on household land or as volunteers in shared green spaces. Respondents spanned a range of income brackets, with a notable presence of middle income households who are typically more engaged in sustainable consumption and environmental programs (Phan et al., 2020).

Prior exposure to UA activities was reported by 63% of respondents and included practices such as community farming, rooftop gardening, or attending educational UA events. These experiences appeared to strongly influence attitudes, with exposed individuals demonstrating significantly greater appreciation for the social, environmental, and educational dimensions of UA. Echoing previous findings (Sarasty et al., 2020), this familiarity was associated with increased perceived benefits such as stronger community ties, more equitable green space distribution, and enhanced environmental awareness. Notably, a subset of respondents in Bandung emphasized UA's cultural relevance, linking traditional agricultural rituals to modern sustainability practices.

Environmental engagement varied markedly across the three cities. Jakarta, burdened by air pollution and traffic congestion, recorded the highest levels of expressed concern about environmental issues, which in turn translated into a stronger declared interest in urban greening. In contrast, Bandung and Yogyakarta reflected more integrated, community based motivations for participation in UA, grounded in local traditions and intergenerational knowledge sharing (Octawijaya et al., 2023; Umeh et al., 2022). Respondents in these cities also demonstrated higher familiarity with ecosystem services (ES) terminology and concepts, often citing cultural, regulatory, and provisioning categories spontaneously.

Willingness to Pay (WTP) Distribution

Across the sample, the average monthly WTP for supporting urban agriculture initiatives was IDR 18,000 (~USD 1.20). This figure varied notably across cities: Yogyakarta residents reported the highest mean WTP, followed by Bandung, while Jakarta recorded the lowest. The elevated WTP in Yogyakarta could reflect the strong cultural attachment to agricultural practices and higher levels of civic participation. Meanwhile, Jakarta's economic disparities and limited access to public green space may explain lower WTP responses. These findings correspond with global patterns of WTP for urban ecosystem services, which generally range from USD 5 to over USD 200 per annum depending on local context, income levels, and environmental pressures (Majid et al., 2020; Herawati et al., 2024).

Demographic analysis revealed that individuals with higher income and educational attainment were significantly more likely to indicate a higher WTP. Respondents earning above the national average expressed stronger support for UA related programs, potentially due to greater disposable income and awareness of long term environmental benefits (Basen et al., 2023). Younger respondents (aged 25–34) tended to show higher WTP values than older age groups, highlighting generational shifts in environmental consciousness.

Importantly, 72% of respondents cited cultural ecosystem services such as recreation, education, heritage, and aesthetic value as the primary drivers of their WTP. These services were consistently ranked higher than provisioning services such as food supply, which were more commonly recognized as supplementary benefits. This distinction echoes findings from international valuation studies, where cultural services are often considered more personally meaningful and emotionally resonant, thereby commanding higher economic value in stated preferences (Shahid et al., 2021). Cultural orientation, community identity, and collective memory emerged as key motivators behind WTP, particularly in Bandung and Yogyakarta.

Regional variations in WTP were further influenced by institutional support, visibility of UA initiatives, and civic culture. In cities with established urban farming programs and strong municipal backing, WTP was significantly higher. Cities characterized by a legacy of civic participation and historical environmental stewardship showed broader consensus on the value of supporting UA. Conversely, in Jakarta, skepticism regarding implementation effectiveness and limited awareness of existing UA projects possibly suppressed WTP enthusiasm (Relawati et al., 2022).

Regression Analysis

The logistic regression model produced several statistically significant predictors of WTP. Household income showed a strong positive association ($p < 0.01$), with higher income respondents more likely to support UA financially. Educational attainment was also a significant predictor ($p < 0.05$), suggesting that environmental literacy and exposure to sustainability discourses are important WTP drivers. Environmental concern, measured through a multi item attitudinal index, was highly significant ($p < 0.01$), reinforcing the well documented link between pro-environmental attitudes and stated support for ecological programs (Tran et al., 2024).

Prior experience with UA initiatives was another strong determinant ($p < 0.05$). Respondents with hands on exposure to community gardens or urban farming projects had a 10.3% higher probability of being willing to pay, supporting the theory that familiarity enhances valuation. Marginal effects indicated that a single category increase in income level raised WTP likelihood by 8.7%, while tertiary education raised it by 6.5%. These quantitative results confirm the importance of socio economic and experiential variables in shaping support for environmental policies.

Cultural ES indicators had a stronger predictive impact than provisioning indicators, as evidenced by higher coefficients in the model. Respondents who ranked cultural services as more important than provisioning were 14.6% more likely to express WTP. This finding reinforces the relevance of subjective, emotional, and identity based ecosystem benefits in valuation studies (Qureshi et al., 2019). However, the analysis also uncovered methodological limitations. Hypothetical bias where participants may overstate their willingness in a non-binding context remains a known concern. Additionally, skewed distributions with zero WTP responses challenged the model's fit, requiring robust standard errors to stabilize estimates. Generalizability is also limited to the urban, internet connected population, with rural and digitally excluded groups not represented.

Estimated Economic Value

Extrapolating the mean WTP across the urban household population provides insight into the potential scale of economic support for UA. At an average of IDR 18,000/month or IDR 216,000 (~USD 14.40) annually, and assuming applicability to 500,000 households in Jakarta, the total annual economic value of UA would reach approximately USD 7.2 million. Extending this valuation to similar mid-sized cities such as Bandung and Yogyakarta, each with populations of 200,000–300,000 urban households, yields projected annual values of USD 2.9 million and USD 3.6 million respectively, under the same assumptions.

These projections offer compelling justification for increased investment in urban agriculture infrastructure and program development. However, they rest on assumptions regarding population homogeneity, stable valuation preferences, and respondents' accurate understanding of the UA programs being proposed. Any overestimation due to hypothetical bias or misinterpretation of the scenario may inflate projected values. Therefore, future research should consider mixed methods validation, including revealed preference approaches and follow up interviews.

Nonetheless, these aggregate estimates provide actionable intelligence for municipal planners, enabling more informed decisions about budget allocations, land use prioritization, and program targeting. Incorporating these values into cost benefit analyses for zoning reform or public health interventions can help mainstream UA into Indonesia's urban sustainability strategies. Moreover, these projections may serve as a foundation for participatory budgeting and community led investment in green infrastructure, reflecting bottom up support as quantified through WTP data.

In summary, four key findings emerged: (1) urban residents showed strong WTP for UA, particularly driven by cultural ecosystem services; (2) Yogyakarta exhibited the highest WTP, linked to strong cultural attachment; (3) socio-economic factors such as income and education were

consistent predictors; and (4) prior exposure to UA significantly increased support. These results provide a factual basis for linking cultural values with economic preferences in urban policy.

Urban Agriculture for Climate Resilience and Ecological Sustainability

This study underscores the increasingly vital role that urban agriculture (UA) plays in bolstering both climate resilience and ecological sustainability within the context of Indonesia's rapidly transforming urban landscapes. As cities face a convergence of environmental crises including the intensification of heatwaves, rising food insecurity, and accelerated biodiversity decline UA has emerged as a multifaceted response to these challenges. By promoting localized food production, UA helps buffer urban populations against global supply chain disruptions and volatile food markets. This internalization of food systems reduces dependence on carbon intensive logistics, thus contributing directly to urban carbon neutrality goals (Kirby et al., 2020; McClintock et al., 2016).

In addition, UA improves the biophysical health of cities by revitalizing underutilized or derelict land parcels and transforming them into productive, ecologically functional landscapes. These green spaces aid in managing stormwater runoff, improving air quality, reducing the urban heat island effect, and enhancing habitat connectivity for pollinators and other beneficial species (Thomas et al., 2022). Furthermore, UA can contribute to groundwater recharge and help buffer cities against flood risks an increasingly urgent issue in Indonesian cities prone to extreme weather events. The integration of UA into urban land use planning also ensures multifunctionality, allowing green infrastructure to simultaneously provide food, ecological, recreational, and cultural benefits. As such, UA not only represents an adaptive strategy in response to climate risk but also aligns with broader ecological restoration efforts within dense urban zones, offering long term environmental gains.

Urban Agriculture and Social Cohesion

From a socio cultural standpoint, UA functions as a key mechanism for nurturing social cohesion, especially within diverse and densely populated urban communities. Community gardens serve as inclusive platforms that transcend class, ethnicity, and age, fostering social interaction among people who might not otherwise connect (Greibitus et al., 2020; Nair et al., 2023). These spaces become arenas for experiential learning, cultural exchange, and collaborative action, reinforcing social capital and mutual trust. In some cases, UA initiatives serve as interfaith meeting spaces, creating new forms of urban solidarity around environmental stewardship.

In particular, UA contributes significantly to the empowerment of women, youth, and low income populations by offering accessible pathways to participate in the stewardship of urban environments. Through participatory planning and co management of green spaces, residents gain a sense of agency and ownership over their neighborhoods, which in turn leads to increased civic engagement and environmental stewardship (Ma et al., 2024). The educational potential of UA is also notable it provides practical environmental education opportunities for schools and local institutions. In cities like Bandung and Yogyakarta, where traditional agricultural rituals remain

culturally embedded, UA has provided a bridge between ancestral knowledge and contemporary sustainability practices. It becomes not only a space for growing food but also a site for reproducing cultural identity, intergenerational learning, and healing from urban alienation.

Global Lessons in Urban Agriculture Policy

International precedents provide valuable lessons for the institutionalization of UA within urban governance frameworks. In Medellín, Colombia, public policy has repurposed abandoned lots into green oases that provide food, education, and employment for disadvantaged communities. The program's integration into citywide agendas ranging from nutrition to safety illustrates how UA can become a cross cutting pillar of urban resilience (Dobele & Zvirbule, 2020). Lessons from Latin America emphasize the importance of inter-agency collaboration and inclusive land access reforms to support marginalized farmers.

In Bangkok, Thailand, policy mechanisms incentivize composting and waste segregation at the household level, creating closed loop systems that feed directly into urban farms. These initiatives have reduced municipal waste burdens while creating economic opportunities for informal workers (Likitswat & Sahavacharin, 2022). Furthermore, the role of public private partnerships in Bangkok's UA expansion demonstrates how corporate social responsibility can be mobilized to support green transitions. Shanghai offers another instructive case, with its robust integration of UA into public land use plans and stringent monitoring of urban food quality. This not only addresses public health concerns but also lends credibility and legitimacy to UA as part of the city's formal food system (Nie et al., 2024).

These cases highlight key enablers of successful UA: legal land tenure, cross sector policy coherence, investment in infrastructure, and active community involvement. Institutional capacity building is equally essential local authorities need expertise in urban ecology, community engagement, and food systems planning. Without these structural supports, UA risks being marginalized or gentrified, losing its capacity to serve the most vulnerable populations. For Indonesian cities, learning from these models can support the development of adaptive, context specific policies.

Methodological Reflections on Valuing Cultural Ecosystem Services

Despite the strengths of the current approach, the valuation of cultural ecosystem services (CES) using the Contingent Valuation Method (CVM) presents important limitations. CES are inherently complex and non-material, comprising subjective experiences such as spiritual enrichment, cultural identity, aesthetic appreciation, and social belonging. These dimensions do not lend themselves easily to monetary quantification. Cultural values are also dynamic they evolve with community experiences and are deeply embedded in socio political and historical contexts.

CVM's hypothetical payment scenarios are often criticized for their susceptibility to cognitive biases and overstatement, particularly in relation to socially desirable behaviors (Reynolds, 2014). Moreover, CVM typically fails to capture collective values preferences expressed at a community

rather than individual level which are central to many CES. Furthermore, the assumption that respondents understand CES and can translate their value into monetary terms may not hold in heterogeneous urban populations with varying degrees of environmental literacy (Okafor et al., 2013). In culturally diverse societies such as Indonesia, where values are frequently embedded in oral traditions, vernacular knowledge, and spiritual practices, the use of standardized valuation tools risks omitting or misrepresenting key cultural meanings. This underscores the need to triangulate CVM findings with ethnographic or deliberative valuation approaches.

Complementary Approaches and Policy Implications

To overcome these constraints, researchers increasingly advocate for mixed methods strategies. Qualitative approaches such as ethnographic fieldwork, photo elicitation, storytelling workshops, and participatory mapping allow for a more nuanced and inclusive exploration of cultural values associated with urban green spaces. These tools surface the narratives and emotional attachments that communities hold toward UA, deepening the interpretive context of WTP data and enhancing its relevance for policymaking. Visual methods in particular can help participants express intangible values, such as beauty, memory, or spiritual connection, that are often excluded from quantitative surveys.

From a policy standpoint, WTP data when triangulated with qualitative insights offers a robust platform for participatory governance. By identifying which ecosystem services communities prioritize, planners can better align budget allocations with citizen preferences. These data can also support the development of equitable financing schemes, such as green taxes, community based contributions, or social enterprise models, which reflect localized demand for environmental amenities. In addition, participatory valuation methods can help uncover power dynamics whose voices are prioritized, whose values are represented and ensure inclusivity in environmental planning.

Embedding WTP findings into participatory processes also helps legitimize urban planning decisions. Residents become co producers of policy, shifting the paradigm from top down service delivery to co-managed public space. This democratic turn in governance fosters social equity, environmental justice, and deeper public trust in institutions (Campbell, 2021; Moran-Rodas et al., 2022). In Indonesia, where decentralized governance allows for local experimentation, these insights are especially valuable for crafting resilient, responsive urban policies that reflect the lived experiences of diverse communities.

Overall, the discussion highlights that (1) Indonesian urban residents value UA primarily for cultural and ecological benefits, (2) socio-economic and experiential factors shape WTP, and (3) methodological constraints must be addressed through mixed approaches. Together, these insights contribute to ecosystem service valuation literature by demonstrating the centrality of cultural services in the Global South, and provide practical evidence for integrating CES into participatory urban planning.

CONCLUSION

This study demonstrates that urban agriculture (UA) in Indonesian cities is valued not only for its provisioning benefits but especially for its cultural ecosystem services, such as heritage, recreation, and community identity. Citizens across Jakarta, Bandung, and Yogyakarta expressed clear willingness to pay (WTP) for UA initiatives, with income, education, environmental concern, and prior exposure emerging as significant predictors. These findings answer the research question by confirming that cultural values are central to public support for UA and should be embedded in urban planning and policy frameworks to achieve more equitable and sustainable outcomes.

Nonetheless, the study has limitations, particularly its reliance on online survey data, the exclusion of non-internet users, and the methodological constraints of the Contingent Valuation Method (CVM) in capturing non-material values. Policymakers are encouraged to combine economic valuation with participatory and qualitative approaches to ensure inclusivity and cultural sensitivity in UA programs. Moving forward, embedding UA into decentralized urban governance, supported by cross-sector collaboration and community-led initiatives, can help Indonesia not only meet sustainability goals but also reimagine urban life through practices that integrate ecological resilience, social equity, and cultural continuity.

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