Vol. 2 No. 1 Edisi Januari 2026 E.ISSN. 3089-8579

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

DATA-BASED VILLAGE PLANNING EDUCATION VIA MUSDESUS FOR SETTLEMENT-ENVIRONMENT PROPOSALS IN KALIJAGA

Isnein Akbar[1*], Abdulah Muzakkar[2]

[1*]Universitas Hamzanwadi, Email: isneinakbar@hamzanwadi.ac.id
[1*]Universitas Hamzanwadi, Email: abdullahmuzakar@hamzanwadi.ac.id

*email koresponden: isneinakbar@hamzanwadi.ac.id

DOI: https://doi.org/10.62567/jpi.v2i1.2262

Abstract

Village development planning that is not grounded in data can lead to poorly targeted programs, particularly for settlement-environment issues such as solid waste, sanitation, drainage, and neighborhood space quality. This community service program aimed to improve residents' literacy in data-based planning and strengthen meaningful participation in formulating settlement-environment program proposals. The activity was conducted in Kalijaga Village, Aikmel Subdistrict, East Lombok Regency, on 17 November 2025 as a special village deliberation meeting (Musyawarah Desa Khusus; Musdesus) involving 75 participants representing village stakeholders, including youth and community organizations (Karang Taruna and the Village Community Resilience Institution/Lembaga Ketahanan Masyarakat Desa; LKMD). A participatory education approach was applied through short lectures, focused discussions, and hands-on proposal drafting using simple minimum data and a standard structure (problem–location–target group–indicators–resource needs). Evaluation was descriptive using facilitator field notes and a proposal-completeness rubric. Of 49 written proposals collected (N=49), 40 (81.6%) met all minimum elements, while 9 (18.4%) were incomplete. The results indicate a shift from general complaints toward more structured proposals with clearer locations, target groups, and basic indicators. Data-based village planning education is a low-cost intervention to improve the quality of community participation outputs and enhance the readiness of proposals for subsequent village planning processes.
Keywords: *village planning; data-based; community participation; settlement environment; data literacy.*

Abstrak

Perencanaan pembangunan desa yang tidak berbasis data berisiko menghasilkan program yang kurang tepat sasaran, khususnya pada isu lingkungan permukiman seperti persampahan, sanitasi, drainase, dan kualitas ruang lingkungan. Kegiatan pengabdian kepada masyarakat ini bertujuan meningkatkan literasi perencanaan berbasis data serta memperkuat partisipasi bermakna warga dalam merumuskan usulan program lingkungan permukiman. Kegiatan dilaksanakan di Desa Kalijaga, Kecamatan Aikmel, Kabupaten Lombok Timur pada 17 November 2025 dalam forum musyawarah desa khusus (Musdesus) bertema "Edukasi Perencanaan Desa Berbasis Data" dengan melibatkan 75 peserta dari unsur Pendamping Desa, Badan Permusyawaratan Desa (BPD), Pemerintah Desa/perangkat desa, perangkat kewilayahan (Kepala Dusun/Kadus dan RT), kader, pemuda, Karang Taruna, Lembaga Ketahanan Masyarakat Desa (LKMD), tokoh agama, dan tokoh masyarakat. Metode pelaksanaan menggunakan edukasi partisipatif melalui pemaparan materi, diskusi terarah, dan latihan penyusunan usulan berbasis data sederhana dengan format minimum (masalah–lokasi–sasaran–indikator–kebutuhan). Evaluasi

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

dilakukan secara deskriptif menggunakan catatan keaktifan peserta dan rubrik kelengkapan unsur usulan. Dari total 49 usulan tertulis yang dihimpun (N=49), sebanyak 40 usulan (81,6%) dinilai lengkap (memenuhi seluruh unsur minimum) dan 9 usulan (18,4%) belum lengkap. Hasil ini mengindikasikan pergeseran pola aspirasi dari keluhan umum menuju usulan yang lebih spesifik lokasi, jelas sasaran, dan memiliki indikator dasar. Edukasi perencanaan berbasis data berpotensi menjadi intervensi berbiaya rendah untuk meningkatkan kualitas partisipasi masyarakat dan mutu usulan program lingkungan pada tingkat desa.
Kata Kunci: perencanaan desa; berbasis data; partisipasi masyarakat; lingkungan permukiman; literasi data.

1. INTRODUCTION

Village development planning is a strategic process that shapes local development directions and outcomes, including settlement environmental quality. Planning that is not supported by adequate data tends to produce generic programs, weak targeting, and limited evaluability. These limitations are frequently observed in settlement-environment issues—solid waste, sanitation, drainage, and neighborhood spatial order—which require specific information such as the location of problems, affected groups, and minimum resource needs (Republik Indonesia, 2008; Republik Indonesia, 2009).

Data-based planning emphasizes the use of factual information to identify problems, set priorities, and formulate measurable programs. At the village level, the required data do not have to be complex; simple, relevant information (e.g., problem points, affected households, facility conditions, and flooding frequency) can already improve proposal accuracy. However, limited data literacy and limited capacity to translate aspirations into a structured proposal format often cause community inputs to remain at the level of generalized complaints. Prior research highlights that the quality of baseline village data is central to generating more accurate program recommendations; approaches such as “data desa presisi” (precision village data) are used to capture real conditions and support more evidence-based policy/program formulation (Natalia & Sjaf, 2021).

In village governance practice, strengthening baseline data can be pursued through participatory updates of village profiles and potentials, including the use of family-based baseline data so that information discussed in deliberative forums is more up-to-date and accountable (Yuningsih & Saefulrahman, 2020). Awareness-raising and capacity-building on the importance of data and information among village apparatus and community actors have also been shown to encourage regular updating of village monographs/profiles as a precondition for better-targeted planning (Lino et al., 2025). In addition, digital tools for managing village potential data (e.g., Android-based systems) can accelerate data availability and support evidence-based decision-making at the village level (Andhi et al., 2024).

Normatively, village governance requires participatory, transparent, and accountable planning. This framework aligns with Law Number 6 of 2014 on Villages (as lastly amended by Law Number 3 of 2024) and the village development guideline stipulated in Ministry of Home Affairs Regulation Number 114 of 2014 (Republik Indonesia, 2014; Kementerian Dalam Negeri Republik Indonesia, 2014). From an Environmental Engineering perspective, data-

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

based planning improves targeting for settlement-environment interventions, clarifies basic service indicators (e.g., fewer flooding points, fewer illegal dumping points, improved hygiene practices), and supports more objective monitoring, including sanitation and hygiene promotion frameworks such as STBM (Kementerian Kesehatan Republik Indonesia, 2014).

From a public participation perspective, participation quality is determined by the extent to which citizens can contribute substantively to decision-making—not merely attend meetings (Arnstein, 1969; Innes & Booher, 2004). Research on local development planning participation also emphasizes that deliberation outputs should be sufficiently informative to be processed into plans and programs (Muluk et al., 2019; Sujastiawan et al., 2025). Therefore, capacity strengthening through participatory education and practical proposal drafting exercises using minimum data is important to improve the quality of village forum outputs.

This community service activity aimed to: (1) enhance community understanding of data-based village planning concepts; (2) train participants to develop structured and measurable settlement-environment program proposals using simple data; and (3) strengthen meaningful community participation in village planning processes.

2. COMMUNITY SERVICE METHODS

a. Location, Time, and Participants

The activity was conducted in Kalijaga Village, Aikmel Subdistrict, East Lombok Regency, on 17 November 2025. A total of 75 participants attended, representing the village facilitator, the Village Consultative Body (Badan Permusyawaratan Desa; BPD), village government and staff, territorial units (hamlet heads/Kepala Dusun; neighborhood units/RT), community cadres, youth, Karang Taruna, the Village Community Resilience Institution (Lembaga Ketahanan Masyarakat Desa; LKMD), religious leaders, and community leaders. This composition was intended to ensure stakeholder representation across the village planning cycle (problem identification–priority setting–proposal formulation) and strengthen the social legitimacy of the proposals.

b. Activity Design

A participatory education method was implemented within the Musdesus format through three main stages:

1) Short lecture: introducing data-based village planning concepts, the data–problem–priority logic, and examples for settlement-environment issues.
2) Focused discussion: identifying commonly occurring and high-impact settlement-environment issues and selecting priority locations.
3) Hands-on drafting exercise: producing proposals using simple minimum data and a standard structure (problem–location–target group–indicators–resource needs).

c. One-Day Musdesus Flow

The Musdesus was delivered as an integrated one-day sequence that combined education and deliberation: (1) opening and clarification of Musdesus objectives; (2) presentation of core material on data-based planning and its application to settlement-environment issues; (3)

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

plenary discussion to agree on priority issues and minimum data needs; (4) small-group work to draft proposals using the standard structure; and (5) plenary presentations and consolidation to align proposals for subsequent village planning stages. This flow was designed to ensure that the Musdesus output moved beyond problem listing and resulted in structured written proposals.

d. Instruments and Evaluation

Evaluation was descriptive and used two sources of data. All group outputs were recorded in a proposal worksheet and collected at the end of the session for analysis.

1) Facilitator field notes on participant engagement (questions, contributions, and group work activities).
2) A proposal-completeness rubric assessing whether each proposal contained the minimum required elements.

N = 49 refers to the number of written proposals collected and assessed, not the number of participants. This occurred because participants worked in groups and a group could produce more than one proposal.

Table 1 presents the rubric used to assess proposal completeness. The rubric supports consistent review of deliberation outputs, aligning with evaluation approaches that emphasize clarity and measurability of participation outputs (Rowe & Frewer, 2000).

Table 1. Proposal completeness rubric (descriptive)

Proposal element	Minimum criterion	Score (0/1)
Problem	Clearly stated and linked to settlement-environment issues	0/1
Location	Specifies a point/RT/hamlet (dusun)	0/1
Target group	Specifies affected group(s) (RT/households/vulnerable groups)	0/1
Indicators	Includes at least one simple output and/or outcome indicator	0/1
Resource needs	Includes minimum needs (facilities/labor/initial cost estimate)	0/1

Total scores ranged from 0 to 5. A proposal was categorized as complete when it received a score of 5.

3. RESULTS AND DISCUSSION

a. Identified Settlement-Environment Issues

The focused discussion identified settlement-environment issues perceived as important by Kalijaga Village residents, including suboptimal household solid-waste management, malfunctioning neighborhood drainage at certain points, the need to strengthen sanitation awareness and hygiene practices (Perilaku Hidup Bersih dan Sehat/PHBS), and traffic-space order in specific corridors (vehicles parked on the road shoulder). Parking issues emerged because some vehicle owners lack adequate garages or parking space, leading to frequent roadside parking. This condition can reduce neighborhood space quality and safety, obstruct local traffic flow, and potentially restrict emergency access.

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

In the solid-waste context, illegal dumping points and limited compliance with sorting/disposal practices at certain priority locations are consistent with studies on 3R implementation and community-based waste-bank models, which emphasize the role of community institutions and local organization (Eprianti et al., 2021; Rusdianto et al., 2022).

Implementation documentation is provided in Figure 1 and Figure 2 to strengthen process traceability.

Figure 1. Documentation of the facilitator delivering material in the Musdesus "Data-Based Village Planning Education", Kalijaga Village, 17 November 2025. Source: Author documentation (2025).

Figure 2. Documentation of Musdesus participants, Kalijaga Village, 17 November 2025. Source: Author documentation (2025).

b. Proposal Quality After Data-Based Exercise

The proposal drafting exercise supported participants in applying the data–problem–priority logic. Participants were guided to use simple minimum data (e.g., incident location, affected groups, and facility conditions) to formulate more specific problems and develop proposals that can be prioritized.

Rubric results show that of 49 written proposals assessed (N=49), 40 proposals (81.6%) met all minimum elements (score 5), while 9 proposals (18.4%) were incomplete (score < 5). Incomplete proposals most commonly omitted one or more elements (e.g., indicators and/or minimum resource needs) and therefore require refinement before integration into village planning documents.

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

Table 2. Summary of proposal completeness (N=49)

Category	Count	Percentage
Complete (score 5)	40	81.6%
Incomplete (score < 5)	9	18.4%
Total	49	100%

c. Examples of Priority Proposals

Table 3 presents examples of priority proposals produced using the standard structure. The "minimum resource needs" column represents an initial estimate to support early decision-making. During integration into formal village planning documents, these needs should be refined through field verification.

Table 3. Examples of priority settlement-environment proposals using simple minimum data

No.	Problem (based on simple minimum data)	Priority location	Target group	Proposed activity	Success indicators	Minimum resource needs (initial estimate)
1	Flooding points during rainfall at specific locations	Petakawan	Affected residents	Drainage normalization/repair	Reduced ponding; improved flow	Supporting materials and labor (±10 people)
2	Illegal dumping accumulation points	Keramba	Nearby households	Organize disposal points + sorting education	Fewer illegal points; increased proper disposal	Simple facilities (bins/sacks, signage, cleaning tools)
3	Uneven sanitation/PHBS practices	Jorong	Vulnerable households	PHBS education + mapping of sanitation needs	Improved PHBS practices; priority needs mapped	Educational media (leaflets/posters) and simple props
4	Roadside parking in specific corridors	Village road corridor (risk points)	Vehicle owners and road users	Parking arrangement/rules + provision of parking pockets	Reduced roadside parking; improved flow/safety	Parking space, simple signs/markings, lighting, management (initial estimate)

d. Discussion

The findings indicate that data-based village planning education can improve the quality of community participation outputs within village forums. A shift from general complaints toward more operational proposals occurred when participants were provided with simple tools: (1) the data–problem–priority logic and (2) a minimum proposal structure. From an Envir

onmental Engineering standpoint, these tools support better targeting of settlement-

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

environment interventions (location- and group-specific) and encourage the inclusion of basic indicators that can be monitored.

Conceptually, improved proposal quality reflects stronger meaningful participation—participation that materially contributes to public decisions (Arnstein, 1969; Innes & Booher, 2004). The combination of focused discussion and hands-on proposal drafting is consistent with participatory learning principles that emphasize local knowledge elicitation and evidence-informed decision-making using accessible data (Chambers, 1994; Pretty, 1995). In development planning contexts, participation improvements are also associated with deliberative forums' ability to produce decision-relevant information (Muluk et al., 2019; Sujastiawan et al., 2025). Therefore, structured written proposals that meet minimum elements can serve as better inputs for subsequent village planning stages because they are easier to verify.

e. Practical Implications

This community service model is relatively easy to replicate through three core steps: (1) preparing minimum settlement-environment data (problem points, facility conditions, affected groups), (2) applying a standard proposal format (problem–location–target group–indicators–resource needs), and (3) facilitating prioritization discussions using urgency, impact, and feasibility criteria. Simple mapping/sketching is recommended to clarify priority locations without adding technical complexity, consistent with participatory mapping/visualization practices in local planning (Brown & Kyttä, 2018; Rendra et al., 2024).

Replication can be strengthened by integrating periodic updates of village profiles/potentials (e.g., through family-based baseline data) so that village forums have more robust and current data references (Yuningsih & Saefulrahman, 2020) and by adopting practical village profile development approaches for data-based planning (Yusliana et al., 2025). In spatial visualization contexts, participatory village profile mapping can help provide more accurate spatial and non-spatial information to support planning (Muslih et al., 2024). Data awareness and information literacy strengthening among village actors further supports regular updating and accountable use of village data in planning (Lino et al., 2025), while digital data systems can improve timeliness and accessibility of village potential data (Andhi et al., 2024).

f. Limitations

The evaluation relied on descriptive assessment without a standardized pre–post design. In addition, the proposals presented were produced as part of an exercise and therefore require further specification (e.g., work volume/length, number of facilities, and scheduling) if they are to be integrated into formal village planning documents.

4. CONCLUSION

This community service activity on data-based village planning education in Kalijaga Village, Aikmel Subdistrict, East Lombok Regency improved the quality of community participation in formulating settlement-environment proposals. Based on the proposal-completeness rubric, 81.6% of written proposals (40 of 49) met all minimum elements

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

(problem–location–target group–indicators–resource needs), indicating that simple data-based tools can strengthen the quality and readiness of deliberation outputs. Going forward, periodic data-based planning education is recommended to institutionalize structured proposal formats, supported by a minimum dataset for settlement-environment issues (e.g., illegal dumping points, flooding points, drainage conditions, and sanitation needs) and complemented by simple mapping/sketching to clarify priority locations.

5. DAFTAR PUSTAKA

Andhi, R. R., Susilo, E., & Candra, F. (2024). Desain sistem data potensi desa berbasis android untuk pembangunan wilayah. Jurnal Informatika dan Teknik Elektro Terapan, 12(3). https://doi.org/10.23960/jitet.v12i3.4944

Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216–224. https://doi.org/10.1080/01944366908977225

Brown, G., & Kyttä, M. (2018). Key issues and priorities in participatory mapping: Toward integration or increased specialization? Applied Geography, 95, 1–8. https://doi.org/10.1016/j.apgeog.2018.04.002

Chambers, R. (1994). The origins and practice of participatory rural appraisal. World Development, 22(7), 953–969. https://doi.org/10.1016/0305-750X(94)90141-4

Eprianti, N., Himayasari, N. D., Mujahid, I., & Srisusilawati, P. (2021). Analisis implementasi 3R pada pengelolaan sampah. Jurnal Ecoment Global, 6(2), 179–184. https://doi.org/10.35908/jeg.v6i2.1437

Innes, J. E., & Booher, D. E. (2004). Reframing public participation: Strategies for the 21st century. Planning Theory & Practice, 5(4), 419–436. https://doi.org/10.1080/1464935042000293170

Kementerian Dalam Negeri Republik Indonesia. (2014). Peraturan Menteri Dalam Negeri Nomor 114 Tahun 2014 tentang Pedoman Pembangunan Desa.

Kementerian Kesehatan Republik Indonesia. (2014). Peraturan Menteri Kesehatan Nomor 3 Tahun 2014 tentang Sanitasi Total Berbasis Masyarakat (STBM).

Lino, M. M., Djani, W., & Neolaka, M. N. B. C. (2025). Pentingnya data dan informasi bagi perencanaan pembangunan desa berkelanjutan. Jurnal Abdi Masyarakat Indonesia, 5(1), 49–58. https://doi.org/10.54082/jamsi.1422

Muluk, M. R. K., Danar, O. R., & Rahmawati, L. (2019). Community participation and development planning in local government level: A study on the formulation of Batu City medium-term development plan. BISNIS & BIROKRASI: Jurnal Ilmu Administrasi dan Organisasi, 26(3). https://doi.org/10.20476/jbb.v26i3.11145

Muslih, A. M., Anhar, A., Baihaqi, A., Farida, A., Ar Rasyid, U. H., Yant, L. A., Siregar, A. W., Jamilah, M., Hayati, D., & Rosita, I. (2024). Pemetaan profil desa dengan pendekatan partisipatif masyarakat di Kabupaten Aceh Barat. Repong Damar: Jurnal Pengabdian Kehutanan dan Lingkungan, 3(1), 54–62. http://dx.doi.org/10.23960/rdj.v3i1.9040

Natalia, G., & Sjaf, S. (2021). Kualitas pembangunan desa berbasis Data Desa Presisi (Kasus:

Jurnal Pengabdian Indonesia (JPI)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/jpi/index
Email: admin@jurnalcenter.com

Desa Neglasari, Kecamatan Dramaga, Kabupaten Bogor, Jawa Barat). Jurnal Sains Komunikasi dan Pengembangan Masyarakat, 5(5), 742–756. https://doi.org/10.29244/jskpm.v5i6.890

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. World Development, 23(8), 1247–1263. https://doi.org/10.1016/0305-750X(95)00046-F

Rendra, M. I., Huda, M. M., Sandy, R. A., Roisewajid, S., Saputra, R. Y., & Abrori, A. N. (2024). Penyusunan peta administrasi desa dengan pemetaan partisipatif untuk mendukung perencanaan dan pembangunan Desa Semambung Kecamatan Kanor Kabupaten Bojonegoro. Abdimas Galuh: Jurnal Pengabdian Kepada Masyarakat, 6(1). http://dx.doi.org/10.25157/ag.v6i1.13741

Republik Indonesia. (2008). Undang-Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah.

Republik Indonesia. (2009). Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (sebagaimana diubah oleh Undang-Undang Nomor 6 Tahun 2023 tentang Penetapan Peraturan Pemerintah Pengganti Undang-Undang Nomor 2 Tahun 2022 tentang Cipta Kerja menjadi Undang-Undang).

Republik Indonesia. (2014). Undang-Undang Nomor 6 Tahun 2014 tentang Desa (sebagaimana telah diubah terakhir dengan Undang-Undang Nomor 3 Tahun 2024 tentang Perubahan Kedua atas Undang-Undang Nomor 6 Tahun 2014 tentang Desa).

Rowe, G., & Frewer, L. J. (2000). Public participation methods: A framework for evaluation. Science, Technology, & Human Values, 25(1), 3–29. https://doi.org/10.1177/016224390002500101

Rusdianto, A. S., Trisnaldi, P., Rashif, E. N., Gintings, P. T. J., Kevriando, K., Ghani, A., Apriliani, P. D., Fitriansyah, J., Septiani, R., Puteri, E. D. K., & Sridayanti, I. (2022). Aplikasi model bank sampah berbasis dusun di Desa Binakal sebagai alternatif pengolahan sampah. Jurnal Pengabdian Masyarakat Indonesia, 2(6), 719–726. https://doi.org/10.52436/1.jpmi.795

Sujastiawan, A., Afriansyah, R., & Muslim, M. (2025). Partisipasi masyarakat dalam perencanaan pembangunan desa: Studi kualitatif Musrenbangdes di Desa Rhee Beru Kecamatan Rhee. Jurnal Kapita Selekta Administrasi Publik, 6(2), 508–514. https://doi.org/10.58406/kapitaselekta.v6i2.2246

Yuningsih, N. Y., & Saefulrahman, I. (2020). Pemutakhiran data profil dan potensi desa berbasis data dasar keluarga. Adi Widya: Jurnal Pengabdian Masyarakat, 4(1). https://doi.org/10.33061/awpm.v4i1.3321

Yusliana, Y., Pramana, A. Y. E., Ardi, I. A., & Setyawan, K. (2025). Profil desa untuk perencanaan pembangunan desa berbasis data di Padukuhan Kowen II, Timbulharjo, Bantul. I-Com: Indonesian Community Journal, 5(3), 1451–1462. https://doi.org/10.70609/i-com.v5i3.7913