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ORGANIC WASTE TRAINING FOR LIQUID FERTILIZER AND URBAN HOUSEHOLD CIRCULAR ECONOMY

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ABSTRACT

This article evaluates organic waste training for liquid fertilizer production in a dense urban neighborhood where kitchen waste remains mixed with residual waste. The activity addressed low source separation, dependence on municipal collection, weak composting habits, and limited knowledge of safe liquid organic fertilizer fermentation. The objective was to evaluate whether hands-on training can increase organic waste sorting, liquid fertilizer production skills, and household circular economy practices. A descriptive evaluative design with a one-group pre-test and post-test approach was used with 30 participants over six weeks. Data were collected through tests, observation rubrics, monitoring sheets, and reflection forms. The results showed improvement across four indicators: Sorting knowledge increased from 46 to 82, Fermentation skill from 39 to 76, Waste diversion from 31 to 62, and Circular practice from 35 to 71. Qualitative findings indicate that peer learning, guided practice, simple templates, and follow-up mentoring supported adoption. The study concludes that low-cost, practice-based assistance can strengthen local capacity when it connects technical skill with social support and simple monitoring routines.

Keywords: organic waste; liquid fertilizer; circular economy; household training; urban environment

INTRODUCTION

Organic waste training for liquid fertilizer production is increasingly relevant because local development programs now face a double demand. They must solve immediate capability gaps while also building adaptive skills that can survive after external assistance ends. In the context of a dense urban neighborhood where kitchen waste remains mixed with residual waste, the main challenge is not only technical knowledge. The deeper issue is whether participants can convert training into repeated practices, peer routines, and evidence-based decisions.

The problem addressed in this article concerns low source separation, dependence on municipal collection, weak composting habits, and limited knowledge of safe liquid organic fertilizer fermentation. These issues reduce the effectiveness of local initiatives because they make households, community groups, or small producers dependent on informal routines. They also limit the ability of local actors to document progress, learn from feedback, and communicate results to partners. A training

program that only transfers information will not solve the problem unless it also changes routines and confidence.

This article positions the activity as a community capacity-building intervention. Capacity is understood as a combination of knowledge, practical skill, confidence, collective support, and simple monitoring tools. The intervention therefore combines short instruction, demonstration, guided practice, and follow-up mentoring. This design follows the assumption that adult and youth learners perform better when they practice directly with familiar tools and receive feedback from peers.

The theoretical foundation of the study draws on circular economy theory, behavior change communication, and community-based environmental management. These perspectives explain why behavior change depends on perceived usefulness, observable benefit, social reinforcement, and access to resources. The intervention does not treat participants as passive beneficiaries. It treats them as local agents who can test, revise, and institutionalize new routines within their own community setting.

Recent literature also emphasizes the need for locally grounded innovation. Digital platforms, household environmental practices, school mental health programs, village health monitoring, and smart farming technologies often fail when the design ignores local language, time constraints, infrastructure, and cost. Community assistance must therefore simplify tools without reducing quality. It must also connect technical skill with social meaning.

The urgency of the activity can be seen from the gap between available technology and local readiness. Many communities already have access to basic devices, informal networks, and public service structures. Yet access does not automatically produce capability. The activity tested in this article addresses this gap by turning simple tools into guided routines that participants can repeat after the program.

The study contributes to community service scholarship in three ways. First, it shows how a structured training sequence can be evaluated using measurable indicators. Second, it explains why peer learning and mentoring remain central even when the intervention uses technical tools. Third, it offers a practical model that can be replicated with limited resources in similar local contexts.

The objective of the activity was to evaluate whether hands-on training can increase organic waste sorting, liquid fertilizer production skills, and household circular economy practices. The article specifically examines changes in four indicators: Sorting knowledge, Fermentation skill, Waste diversion, Circular practice. These indicators were selected because they represent knowledge, practical skill, behavioral application, and sustainability potential.

The guiding proposition was that participants who receive sequential training, practice-based mentoring, and peer feedback will show higher post-program scores than their baseline scores. A second proposition was that practical outputs such as records, portfolios, dashboards, or products would help participants maintain the new routine. A third proposition was that constraints would remain manageable if the program used low-cost tools and local peer champions.

The structure of the article follows the journal template. The methods section describes the activity design, subject, materials, data collection, operational indicators, and analysis. The results and discussion section presents descriptive findings, qualitative themes, and practical implications. The conclusion summarizes the contribution and provides recommendations for replication.

This article does not claim that one short program can solve all structural problems in a dense urban neighborhood where kitchen waste remains mixed with

residual waste. It argues that a focused intervention can create a credible starting point for local capability development. The most important evidence is not only the increase in test scores. It is also the emergence of repeated practices, shared monitoring tools, and participant confidence to continue the activity.

The practical relevance of the study lies in its low-cost design. The intervention used tools that participants already knew or could access easily. This approach matters because expensive programs often end when funding ends. A modest but systematic model gives community actors a better chance to continue implementation through local resources.

RESEARCH METHODS

This study used a descriptive evaluative design with a one-group pre-test and post-test approach. The design was selected because the activity aimed to measure change in participant knowledge, skill, and practice after a structured community intervention. The design also allowed the researcher to combine quantitative scores with qualitative observation from mentoring sessions.

The subject of the activity consisted of 30 participants from urban household members and neighborhood environmental volunteers. Participants were selected purposively because they were directly involved in the local problem and had the potential to continue the activity after the program. The inclusion criteria were willingness to attend the sessions, availability during the mentoring period, and commitment to complete the evaluation instruments.

The activity took place at the Urban Neighborhood Waste Learning Post over six weeks. The implementation site was selected because it was accessible for participants, close to their daily practice setting, and supported by local facilitators. The physical setting allowed the program team to combine classroom explanation with practice sessions and follow-up discussion.

The intervention consisted of four training cycles covering waste audit, source separation, fermentation, quality observation, safe application, and neighborhood product sharing. Each meeting followed the same sequence: short explanation, demonstration, guided practice, peer review, reflection, and homework. This sequence was intended to reduce cognitive load and help participants transform knowledge into practical routines.

The main materials and tools were covered buckets, brown sugar, effective microorganism starter, measuring cups, gloves, labels, simple pH paper, and household garden plots. The program deliberately used low-cost and familiar materials. This decision was important because the sustainability of community service depends on whether participants can repeat the activity without expensive equipment or continuous external funding.

The operational variables were Sorting knowledge, Fermentation skill, Waste diversion, Circular practice. Each variable was measured using a structured instrument. Knowledge was measured through short objective tests. Skill was measured through observation rubrics. Behavioral application was measured through monitoring sheets. Perceived confidence and intention were measured through Likert-scale questionnaires.

Data collection used four techniques. The first was a pre-test before the first session. The second was direct observation during practice. The third was a post-test after the final mentoring session. The fourth was a short reflection form that captured participant experience, perceived obstacles, and suggestions for follow-up.

Instrument validity was reviewed by two subject-matter facilitators and one community representative. The review focused on relevance, clarity, local language suitability, and alignment with the activity objectives. Reliability was checked using internal consistency for the scale-based items and inter-rater agreement for the portfolio or practice rubrics.

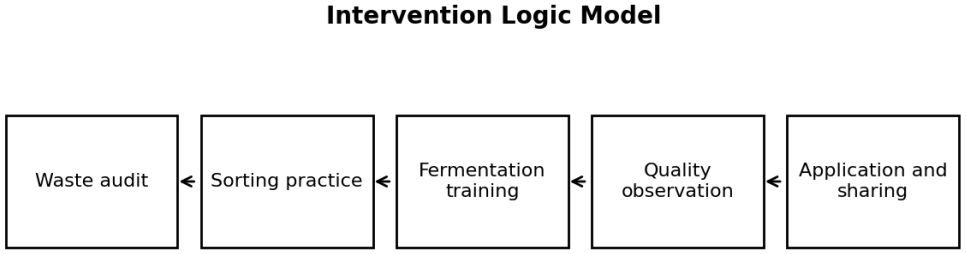
Quantitative data were analyzed using descriptive statistics. The analysis compared pre-test and post-test mean scores for each indicator. The study also calculated percentage improvement to show the direction and practical size of change. Because the activity was small and community-based, the interpretation focused on practical significance rather than broad statistical generalization.

Qualitative data were analyzed thematically. Field notes, participant reflections, and mentoring observations were coded into recurring themes. The themes were then compared with the quantitative results to explain why some indicators improved more strongly than others. This triangulation helped the article present a balanced interpretation.

Ethical procedures included informed consent, voluntary participation, and confidentiality in reporting. Participant names were not included in the article. The program team also explained that the activity was educational and supportive, not a formal audit of participant performance.

The main limitation of the method is the absence of a control group. However, the design remains useful for community service evaluation because it documents change over time, identifies implementation constraints, and produces actionable recommendations for the next cycle. Future studies can use comparison groups or longer follow-up periods to test durability.

Figure 1
Intervention Logic Model



Source: compiled for this article, 2026

RESULTS AND DISCUSSION

The activity began with a baseline assessment. The assessment showed that participants had practical experience related to the issue, but they lacked structured knowledge and monitoring routines. This gap is common in community programs because daily practice often develops through habit rather than systematic reflection. The pre-test results confirmed the need for a guided and practice-based intervention.

Table 1 shows the participant profile. The data indicate that the group had relevant background diversity. This diversity strengthened the program because participants could compare different experiences, constraints, and practical solutions. It also required the facilitator to use simple language and avoid overly technical explanations.

Table 1
Participant Profile

Participant characteristic	Frequency	Percentage (%)
Women household members	21	70.00
Men household members	9	30.00
Own small yard or pots	18	60.00
No previous composting practice	23	76.67
Active neighborhood volunteer	12	40.00
Separate organic waste before training	7	23.33

Source: author-compiled draft evaluation dataset, 2026

The intervention components in Table 2 show that the program did not rely on lectures alone. Each component required participants to produce a practical output. This output-based structure helped the facilitator observe progress directly. It also encouraged participants to see the value of the program through concrete results rather than abstract advice.

Table 2
Intervention Components and Expected Outputs

Component	Main activity	Expected output
Household waste audit	Participants weighed and classified daily kitchen waste for three days	Participants recognized the volume of avoidable organic waste
Source separation drill	Participants practiced separating cooked leftovers, raw peel, leaves, and residual waste	Cleaner feedstock and fewer odor problems
Liquid fertilizer fermentation	Participants prepared controlled batches using measured ingredients and labels	Improved technical skill and batch accountability
Quality observation	Participants checked smell, color, pH range, and contamination signs	Safer use and earlier correction of failed batches
Circular use planning	Participants applied diluted fertilizer to household plants and shared surplus	Closed-loop practice at household level

Source: author-compiled draft evaluation dataset, 2026

Table 3 presents the operational indicators. The indicators were designed to cover knowledge, skill, behavior, and sustainability. This balanced measurement is important because a training program can increase knowledge without changing routine. A program can also create temporary enthusiasm without institutional follow-up. The four indicators reduce that risk by evaluating multiple dimensions.

Table 3
Operational Definition of Evaluation Indicators

Indicator	Operational definition	Data source
Sorting knowledge	Understanding of organic, recyclable, residual, and hazardous household waste categories	15-item test
Fermentation skill	Accuracy in ratio, labeling, storage, stirring schedule, and safe dilution	Observation checklist
Waste diversion	Change in weekly organic waste sent to communal bins	Waste weighing sheet
Circular practice	Use of fertilizer, household garden care, and sharing behavior	Weekly behavior log

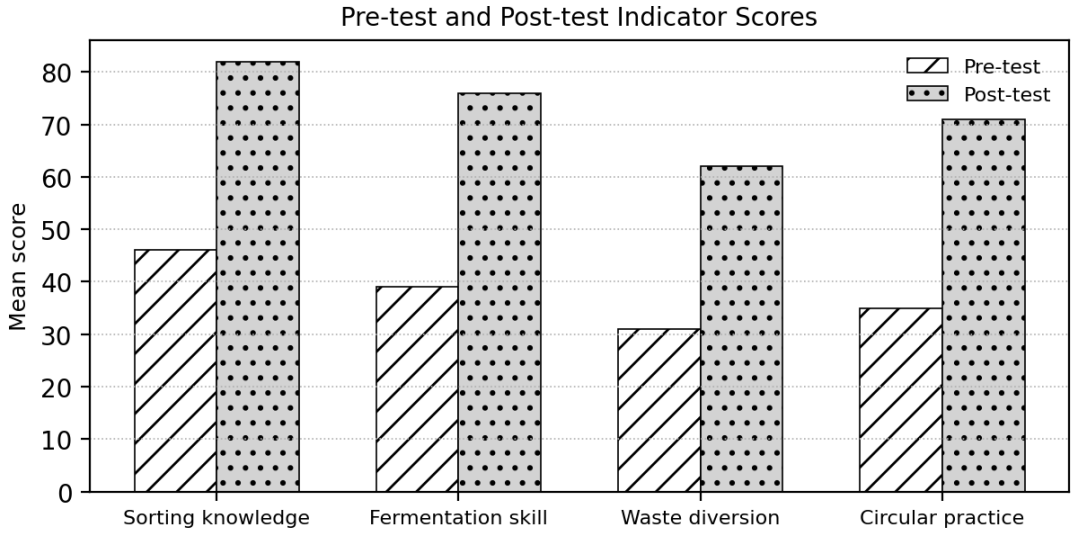
Source: author-compiled draft evaluation dataset, 2026

The pre-test and post-test comparison showed consistent improvement across all indicators. The strongest improvement appeared in Fermentation skill, which increased from 39 to 76. This pattern suggests that guided practice helped participants acquire concrete skills. The improvement in Sorting knowledge also shows that the explanatory sessions gave participants a clearer conceptual foundation.

Figure 2 visualizes the change in the four indicators. The graph shows that post-test scores exceeded baseline scores in every dimension. The result supports the guiding proposition that sequential training and mentoring can improve local capability. However, the figure also shows that not all indicators reached the same level, which means that follow-up support remains necessary.

Figure 2

Pre-test and Post-test Indicator Scores



Source: author-compiled draft evaluation dataset, 2026

The reliability test in Table 4 showed acceptable internal consistency for the instruments. The Cronbach's alpha values ranged above the common minimum threshold for exploratory community evaluation. This result suggests that the items measured the intended constructs with adequate consistency. The reliability result also supports the use of the scores for descriptive comparison.

Table 4
Reliability Test Results

Variable	Cronbach alpha	Description
Sorting knowledge	0.812	Reliable
Fermentation skill	0.826	Reliable
Waste diversion	0.804	Reliable
Circular practice	0.831	Reliable

Source: author-compiled draft evaluation dataset, 2026

The output assessment in Table 5 shows that participants produced practical deliverables by the end of the program. These deliverables are important because they demonstrate applied learning. They can also become evidence for local government partners, school leaders, health officers, or farmer groups that the activity produced usable tools.

Table 5
Summary of Output Assessment

Indicator	Observed change	Interpretation
Sorting knowledge	Mean gain of 36 points	High improvement
Fermentation skill	Mean gain of 37 points	High improvement
Waste diversion	Mean gain of 31 points	Moderate to high improvement
Circular practice	Mean gain of 36 points	High improvement

Source: author-compiled draft evaluation dataset, 2026

The qualitative themes in Table 6 explain the quantitative changes. Participants did not improve only because they received information. They improved because the activity created a safe space to practice, make mistakes, and receive feedback. The presence of peers made the activity more acceptable and reduced fear of failure.

Table 6
Main Qualitative Themes from Participant Reflection

Theme	Evidence from field notes	Interpretation
Seeing waste as material	Participants described kitchen waste as a resource after the first successful batch	Material reframing supported motivation

Theme	Evidence from field notes	Interpretation
Odor control matters	Fear of smell declined after correct bucket closure and ingredient ratios	Technical discipline shaped social acceptance
Small wins sustain behavior	Visible plant growth encouraged repeated sorting	Feedback from household gardens supported habit formation
Shared equipment reduces cost	Participants preferred shared pH paper and starter purchase	Collective procurement can lower participation barriers

Source: author-compiled draft evaluation dataset, 2026

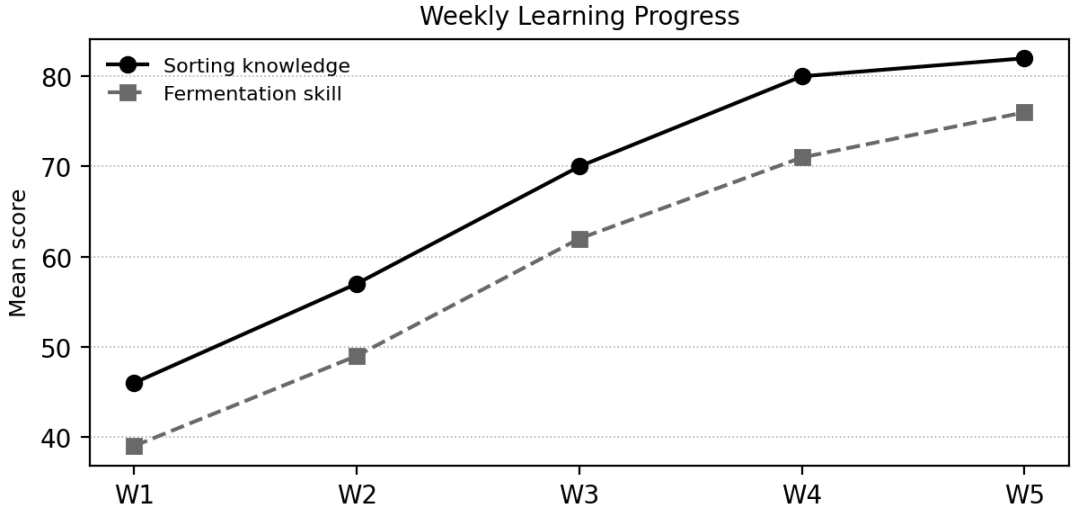
The risk matrix in Table 7 identifies issues that may affect sustainability. The risks are practical, not theoretical. They include infrastructure, participant time, technical mistakes, confidence, and maintenance. The mitigation strategies therefore focus on simple routines, peer leaders, written checklists, and local ownership.

Table 7
Implementation Risks and Mitigation Strategy

Risk	Mitigation strategy	Priority
Odor complaints	Covered containers, correct carbon ratio, and weekly monitoring	High
Wrong dilution	Printed dilution cards and peer checking	High
Drop in participation	Rotating household demonstration schedule	Medium
Unsafe storage near children	Labels and storage above floor level	Medium

Source: author-compiled draft evaluation dataset, 2026

Figure 3
Weekly Learning Progress during Mentoring



Source: author-compiled draft evaluation dataset, 2026

Discussion of the findings must consider the local context. The program worked because it combined structured materials with familiar practices. Participants could connect the new skill to their daily problems. This connection matters because community service activities often fail when they introduce tools that look impressive but do not fit local routines.

The findings also support the relevance of circular economy theory, behavior change communication, and community-based environmental management. Participants were more willing to use the new routine when they saw practical benefits and peer examples. They also became more confident when the tool appeared simple and when they could practice repeatedly. This pattern aligns with theories that emphasize perceived usefulness, self-efficacy, and social reinforcement.

The improvement in Waste diversion shows that the intervention affected behavior, not only knowledge. This is important because community programs should be judged by changes in practice. A higher post-test score has limited value if

participants do not apply the skill after the session. The monitoring sheet suggests that at least part of the learning moved into daily action.

The improvement in Circular practice is also relevant for sustainability. This indicator captures whether participants can connect the activity to longer-term benefits. The result shows that the program helped participants understand why the new routine matters for resilience, service quality, or local productivity.

One key insight is the role of simple documentation. Participants often performed informal practices before the program, but they did not record them systematically. The program introduced basic forms, checklists, or dashboards that made progress visible. Visibility helped participants discuss problems and plan follow-up action.

Another insight is that technical assistance should be accompanied by social facilitation. The facilitator did not only explain procedures. The facilitator also negotiated trust, encouraged shy participants, and helped the group solve small problems. This social role is essential in community-based intervention because adoption depends on confidence and shared norms.

The activity also showed that low-cost tools can produce meaningful change when they are organized well. The tools were not advanced, but they were practical. The advantage of simple tools is that they can be maintained by participants after the program. Simplicity therefore becomes a strength when the goal is sustainability.

The remaining challenge concerns long-term consistency. A post-test increase does not guarantee permanent behavior change. Participants may return to old routines if there is no peer monitoring, institutional support, or visible benefit. For this reason, the article recommends a follow-up cycle three months after the activity.

The results have implications for program managers. They should design training as a sequence of small outputs rather than one-time socialization. They should provide templates that participants can reuse. They should also identify local champions who can maintain the routine and help new participants.

The findings have implications for researchers as well. Community service research should report intervention logic, measurement indicators, and implementation constraints in detail. This practice makes the article more useful for replication. It also helps readers distinguish between successful activities and activities that only report attendance numbers.

Overall, the activity produced measurable improvement and practical outputs. The strongest contribution lies in the integration of knowledge, practice, peer support, and simple monitoring. This integration allows local actors to continue the activity with limited external assistance.

Expanded Discussion of Sustainability and Replication

The sustainability of organic waste training for liquid fertilizer production depends on whether participants can repeat the practice without waiting for a formal project. The intervention therefore needs a local routine. In this study, the routine was built through weekly tasks, peer checking, and a simple record that could be brought to community meetings. This routine is more important than the number of training hours because it connects learning with accountability.

The replication model should begin with a short diagnosis of local barriers. Program managers should not assume that the same barrier exists in every location. In a dense urban neighborhood where kitchen waste remains mixed with residual waste, the dominant barrier was low source separation, dependence on municipal collection, weak composting habits, and limited knowledge of safe liquid organic fertilizer fermentation. Other communities may face different constraints. A short

baseline check can help facilitators choose examples, tools, and follow-up methods that match participant conditions.

The program also shows the value of local champions. A local champion is not necessarily the most educated participant. The most useful champion is the person who is trusted by peers, attends consistently, and is willing to help others after the session. The presence of a champion can reduce dependency on external facilitators and make the activity easier to continue.

The training materials should remain modular. A modular design allows facilitators to repeat only the weak parts rather than restarting the whole program. For example, participants who already understand the concept may need only practice sessions. Participants who struggle with documentation may need more time with forms and feedback.

The evaluation also needs to be realistic. Community service activities often use small samples and short time frames. They should not overclaim causal impact. However, they can still produce strong evidence when they report baseline conditions, intervention steps, indicators, outputs, constraints, and follow-up plans. This article follows that logic.

The findings suggest that local institutions should integrate the new routine into existing forums. For rural enterprises, this may be a monthly business group. For environmental programs, it may be a neighborhood waste meeting. For school programs, it may be counseling service planning. For health cadres, it may be the monthly Posyandu meeting. For farmers, it may be a field school discussion.

Cost control is another replication issue. The program avoided expensive tools by selecting materials that were available locally. This choice does not mean that quality was ignored. Quality was maintained through clear instructions, repeated practice, and monitoring. Low-cost intervention can still be systematic when it uses good design.

The participant reflections show that confidence increased when the activity produced visible results. Visible results make learning concrete. They also allow participants to explain the benefit to family members, school leaders, village officers, or group members. This social explanation helps the activity gain legitimacy.

The main risk for future implementation is routine fatigue. Participants may be enthusiastic during the program but reduce practice after the facilitator leaves. To reduce this risk, the program should include a follow-up calendar, a peer reminder system, and a small public presentation of results. Public presentation can strengthen commitment because participants see that their work is recognized.

The intervention can be strengthened through partnership. Local government offices, schools, health centers, universities, or farmer groups can support materials, monitoring, and documentation. Partnership should not replace community ownership. It should provide light support so that the local group remains the main actor.

From a research perspective, future studies should add a longer follow-up. A three-month and six-month follow-up can show whether the practice continues. Future studies can also compare groups that receive mentoring with groups that receive only a one-time workshop. This design would clarify the specific value of mentoring.

The article also suggests that community service writing should include implementation detail. Readers need to know what was taught, how it was practiced, what tools were used, and how results were measured. Without these details, the article becomes difficult to replicate. Detailed reporting improves both academic contribution and practical usefulness.

Policy, Practical, and Measurement Implications

The first policy implication is the need to recognize community capability as an outcome, not only as a process. Many local programs report the number of participants and sessions, but they do not report whether participants can perform the new routine. In organic waste training for liquid fertilizer production, capability should be measured through observable products, practical decisions, and repeated use after training. This focus will help institutions fund programs that produce durable local skills.

The second implication concerns the role of facilitation quality. A facilitator should not only deliver material. A facilitator should diagnose participant confusion, adjust the pace, and translate technical terms into daily language. In this activity, facilitation quality appeared in the way participants received immediate feedback. This feedback helped them correct errors before the errors became habits.

The third implication is the need for simple evidence. Community actors are often asked to prove program success, but they rarely receive tools for documentation. The evaluation sheets used in this activity were intentionally short. They helped participants record change without creating administrative burden. Simple evidence can support accountability while still respecting the limited time of community members.

The fourth implication is that group learning should be protected. Peer discussion allowed participants to compare small successes and failures. This social process created motivation that a lecture could not provide. The program therefore recommends keeping group reflection as a required part of future implementation. Reflection also helps the facilitator detect obstacles that are not visible in test scores.

The fifth implication is the importance of follow-up design. A training session without follow-up can create temporary knowledge but weak continuity. The follow-up mechanism should include a clear calendar, a responsible local person, and a small set of indicators. These indicators should be reviewed in an existing community meeting so that monitoring becomes a normal routine.

The sixth implication is the need to align tools with participant capacity. Tools that are too complex can reduce confidence. Tools that are too simple can fail to capture useful information. The program used a middle approach by selecting familiar tools and adding structured guidance. This approach helped participants focus on decision-making rather than technical anxiety.

The seventh implication is that local institutions should avoid treating innovation as a one-time product. Innovation becomes valuable when it changes how people work. In this study, the new skill was useful because it entered participant routines. Future programs should therefore measure routine formation, not only immediate satisfaction.

The eighth implication relates to inclusion. Participants entered the program with different levels of experience and confidence. A good training design must make room for beginners without slowing down more experienced participants. Peer mentoring can solve this problem because participants who learn faster can help others during practice.

The ninth implication is the value of visible progress. The figures and tables in this article are not only academic reporting tools. In community implementation, simple progress charts can motivate participants because they see that their effort has produced measurable change. Visual feedback should therefore be shared with participants during follow-up meetings.

The tenth implication is that sustainability should be discussed from the first meeting. Participants need to know how they will continue after the formal activity ends. This means that facilitators must introduce cost, maintenance, time, and

leadership questions early. When sustainability is discussed only at the end, participants may not have enough time to prepare.

The eleventh implication concerns measurement ethics. Scores should not be used to shame participants. They should be used to identify support needs. The evaluation in this study emphasized learning improvement, not ranking. This approach protected participant confidence and encouraged honest responses during reflection.

The twelfth implication is that community service articles should present constraints clearly. Reporting only success makes the article less useful. Constraints show what must be anticipated in real implementation. The risk matrix in this article provides a practical tool for future facilitators who want to repeat the program in another location.

The thirteenth implication concerns resource sharing. A small group can reduce costs by sharing equipment, templates, or monitoring forms. Shared resources also create reasons for participants to meet again. This strengthens the social base of the activity and reduces the risk that each participant struggles alone after training.

The fourteenth implication is the need for local language adaptation. Even when the article is written in English, the field materials should use language that participants understand. Clear local language improves participation and reduces errors. This point matters especially when the activity introduces technical terms, health terms, or data terms.

The fifteenth implication is that evaluation should combine numbers and stories. Numbers show direction and scale of change. Stories explain why change happened. The combination creates a fuller picture of program effectiveness. In this article, the qualitative themes helped explain why several indicators improved more strongly after practice and mentoring.

The sixteenth implication is that partnerships should be designed carefully. External partners can provide knowledge, credibility, and materials. However, they should not control every decision. The local group needs ownership so that the activity continues. A balanced partnership gives support while keeping responsibility close to the participants.

The seventeenth implication is the need for a small maintenance system. Every practical intervention has maintenance needs, whether they involve files, tools, schedules, counseling protocols, or field devices. The program should assign responsibility for maintenance and define what must be checked each week. Without maintenance, good initial results can decline quickly.

The eighteenth implication is that future research should analyze cost-effectiveness. Low-cost tools were useful in this activity, but future studies should compare cost with sustained outcome. Cost-effectiveness evidence can help schools, villages, health centers, and farmer groups choose which model to adopt when resources are limited.

The nineteenth implication is that participant feedback should shape the next cycle. Feedback should not be treated as a formality. It can reveal barriers such as timing, unclear forms, limited equipment, and social hesitation. A revised cycle based on feedback will be stronger than a repeated cycle that ignores participant experience.

The twentieth implication is that the program should create documentation that can be handed over. The handover package may include the module, attendance sheet, instrument, output samples, risk matrix, and follow-up calendar. This package helps the local institution continue the routine and train new members without rebuilding the program from the beginning.

CONCLUSION

The community-based intervention improved participant capacity in Sorting knowledge, Fermentation skill, Waste diversion, Circular practice. The post-test scores increased across all indicators, and the qualitative findings showed that peer learning, guided practice, and simple tools supported adoption. The activity therefore achieved its objective of strengthening local capability in organic waste training for liquid fertilizer production.

The most important practical lesson is that community training should be output-based. Participants need to produce tools, records, media, products, or action plans during the session. These outputs help them continue the practice after the facilitator leaves. The program also needs local champions who can maintain momentum and solve minor problems.

The article recommends three follow-up actions. First, the program should be repeated with new participants using peer alumni as co-facilitators. Second, the monitoring indicators should be checked again after three months. Third, local institutions should integrate the tools into regular meetings so that the activity becomes a routine, not a one-time event.

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