

THE ROLE OF SOFO-SOFO IN STRENGTHENING HEALTH AWARENESS AND LOCAL WISDOM IN NIAS

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Abstract

This community service project, conducted in Bawonifaoso Village, Nias, aimed to explore and promote the role of Sofo-sofo (*Ageratum conyzoides*) in strengthening health awareness and preserving local wisdom. Sofo-sofo is a medicinal plant traditionally used by the Nias community as a natural tonic and for various health purposes, yet its potential remains underutilized among younger generations. The project employed participatory approaches, including workshops, demonstration gardens, herbal preparation training, and storytelling sessions with local elders, to enhance both knowledge and practical skills regarding Sofo-sofo. The results indicate a significant increase in community awareness of Sofo-sofo's health benefits, particularly its role in improving stamina and supporting general wellness. Participants reported incorporating Sofo-sofo into their daily routines and expressed a renewed appreciation for traditional medicinal practices. The project also strengthened intergenerational knowledge transfer, fostering cultural pride and sustaining intangible heritage. Moreover, the integration of Sofo-sofo activities into local cultural events and schools enhanced community engagement and motivation. These findings highlight the effectiveness of combining local wisdom with health promotion initiatives, demonstrating that culturally grounded interventions can simultaneously improve health literacy and preserve heritage. The project provides a model for leveraging ethnobotanical knowledge in rural community development, emphasizing sustainability, community ownership, and the integration of traditional practices with modern health education.

Keywords: *Sof-sofo; Local Wisdom; Health Awareness; Ethnobotany; Community Engagement; Nias; Traditional Medicine*

A. Introduction

The island of Nias, situated off the western coast of Sumatra, Indonesia, is rich in cultural heritage and local wisdom, particularly in the domain of traditional medicinal plants. Among these, the plant known locally as sofö-sofö (linguistically rendered in Nias dialect) has been

traditionally employed by local communities for various health purposes fever, cough, gastrointestinal complaints, even as a general vitality "tonic". This community service project is carried out in Bawonifaoso Village on Nias Island and explores the role of sofö-sofö in enhancing health awareness and revitalising local



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wisdom around community well-being. It emerges at the intersection of public health promotion, ethnobotanical knowledge, and cultural-based empowerment of rural communities.

The rationales for this project are multiple. First, global attention to non-communicable diseases, vitamin deficiency, fatigue and general malaise in rural settings underscores the need for locally appropriate solutions that draw on community resources. Traditional medicinal plants remain under-utilised or under-documented in many Indonesian contexts. Second, the preservation of local wisdom is a key dimension: studies show that for the Nias community, a lexicon of traditional herbal plant names including “sofö-sofö” forms part of intangible cultural heritage. For instance, Gea & Rahardi (2021) documented the lexicon of traditional herbal-medicine plants in Nias sofö-sofö is included among ten such lexicons. Third, greater health awareness among youth and adult populations in Bawonifaoso Village can be fostered by integrating culturally meaningful cornerstones such as a respected local medicinal plant into health education programming.

In particular, the plant sofö-sofö (scientifically identified often as *Ageratum conyzoides* or related taxa) is of interest.

A pilot phytochemical/antimicrobial study showed that sofö-sofö leaf extracts exhibited antibacterial activity against *Propionibacterium acnes* and

Staphylococcus epidermidis. While this research addresses a narrow antimicrobial use-case, it points to the potential biomedical relevance of the plant and thus to its potential validation. Combining this botanical research with community health promotion provides a strong foundation for the project. Thus the project’s goal is two-fold: (1) to raise awareness in Bawonifaoso Village of the value of local medicinal-plant knowledge (especially sofö-sofö) for everyday health and physiological stamina, and (2) to build local capacity children, youth, families, and traditional health-practitioners to utilise, conserve, and embed the use of sofö-sofö in culturally appropriate health practices, thereby strengthening local wisdom and health literacy. The thematic phrase “tonic or stamina-booster” reflects local narrative claims around sofö-sofö as a reinforcing health agent rather than mere treatment.

The methodological orientation involves community workshops, participatory inventory of the plant and uses, demonstration of safe preparation/usage, health-education modules linking stamina/energy with nutrition and plant-based tonics, and mobilisation of local “knowledge keepers” (traditional healers, elder women) as co-facilitators. These interventions are aligned with models of community-based health promotion and ethnobotanical engagement. From the literature, the importance of traditional medicinal practices in Indonesia is well-documented.



For instance, Dachi & Tambunan (2025) examined the local knowledge of ethnomedicine and medicinal plants on Nias Island and found that around 50% of community respondents still actively use medicinal plants, citing reasons of cost, familiarity, and perceived safety. In more general terms, a scoping review on factors influencing adult use of traditional medicine found that cultural preference and inherited knowledge strongly drive usage decisions. Synthesising these findings, the project in Bawonifaoso seeks to address both the health-application dimension (stamina/tonic) and the cultural-wisdom dimension (knowledge transmission, local identity, plant conservation).

Crucially, the link between health literacy and local plant knowledge can catalyse community empowerment. When community members recognise that sofö-sofö is not merely a folkloric element but a workable health asset, they are more likely to allocate attention to its sustainable use, preserve its habitat, share knowledge across generations, and integrate it into local health practices. The community service thus bridges ethnobotany, public health promotion, and cultural heritage. In summary, this introduction sets the stage for the community service activity: in Bawonifaoso Village, the project will engage local stakeholders in revitalising and embedding the use of sofö-sofö as a local tonic for stamina, while at the same time strengthening health awareness and preserving local wisdom. The integration of

research findings (botanical, cultural) provides a scholarly grounding, and the community-based methodology ensures relevance and sustainability. In the next sections, the project will outline implementation, monitoring, outcomes and sustainability strategies.

B. Method of Implementation

This community service programme is structured into five sequential phases: (1) Stakeholder Engagement & Baseline Survey, (2) Knowledge Mobilisation & Resource Development, (3) Participatory Workshop & Demonstration, (4) Community Implementation & Monitoring, and (5) Sustainability and Follow-up. Each phase is designed to integrate the traditional use of Sofö-Sofö with local health awareness efforts and cultural-wisdom transmission among the community of Bawonifaoso Village, Nias.

1. Stakeholder Engagement & Baseline Survey

In the first phase, the project team convenes meetings with village leadership, local health workers, school principals, and traditional healers in Bawonifaoso Village to secure buy-in and co-ownership of the programme. At the same time, a baseline survey is administered among a representative sample of children, adults and elders in the village to assess: (a) their knowledge and attitudes regarding local medicinal plants (particularly Sofö-Sofö), (b) health awareness levels (e.g., stamina, daily vitality, family health practices), (c) current use of Sofö-Sofö and other traditional herbs,



and (d) barriers to the use of local plant-based tonics. This aligns with ethnobotanical research in Nias which found 50 medicinal plant species used by community members, and documented knowledge gaps among younger generations. The survey employs mixed methods: structured questionnaires, semi-structured interviews with elder informants and focus group discussions (FGDs) with youth. Data are both quantitative (knowledge scores, frequency of use) and qualitative (narrative accounts of plant use, cultural meaning).

2. Knowledge Mobilisation & Resource Development

Following baseline assessment, the project team collaborates with local healers and botanists to co-develop educational materials and a “Sofö-Sofö Handbook” covering plant identification, safe preparation methods (tea, infusion, decoction), dosage guidelines, caution/contraindications, and stamina-related usage (tonic, energy boost, general health maintenance). Literature on medicinal plant knowledge emphasises the importance of documentation of local lexicons: for example, *Lexicon of Traditional Herbal Medicine in Nias* identified “Sofö-Sofö” as a local term for a medicinal plant. These materials are illustrated, translated into the Nias dialect and Bahasa Indonesia, and designed for schools, community health posts and village reading corners. A small demonstration garden of Sofö-Sofö is established in a village common

area, enabling observation, harvesting and practical sessions.

3. Participatory Workshop & Demonstration

In this phase, participatory workshops are held for three groups: (a) children and youth in schools, (b) adult community members and families, and (c) traditional healers and volunteers. Each workshop includes: introduction to Sofö-Sofö (botany, cultural meaning), hands-on preparation (tea/decoction), health-awareness session (role of tonic herbs for stamina, vitality, preventive health practices) and group discussion/reflection. Interactive methods (games, stories, role-plays) are used to engage youth. The workshops emphasise bridging local wisdom with modern health literacy: for instance, linking stamina/fatigue concepts with physical activity, diet, and herb usage. Ethnobotanical research underscores that participatory approaches support knowledge transmission and empowerment. The workshops also train volunteer “Sofö-Sofö Ambassadors” among youth and adult community members who commit to leading monthly reading/plant sessions and monitoring usage.

4. Community Implementation & Monitoring

The core implementation phase lasts twelve weeks. Activities include weekly community reading/circle sessions (children and families) held at the reading garden/house of knowledge; bi-weekly mobile outreach to hamlets with less access;



and monthly “Stamina Tonics Day” events where Sofö-Sofö preparations are shared and health awareness mini-talks are held (on hydration, diet, rest, activity). During this phase, monitoring is conducted by ambassadors: attendance logs, number of Sofö-Sofö preparations consumed, self-reported stamina/energy levels (pre/post weekly), and feedback on usability and perceptions. Mentor logs, photo-documentation and short feedback surveys are used. This monitoring aligns with prior research emphasising the need to track community use and attitudes toward medicinal plants. Data are analysed descriptively (attendance rates, preparation counts, self-reported stamina changes) and qualitatively (themes of knowledge change, cultural appreciation, barriers).

5. Sustainability and Follow-up

To ensure long-term impact, the final phase focuses on institutionalising the programme: the volunteer ambassadors form a village reading/medicinal plant club; the village allocates a small fund for replenishing the demonstration garden and herb stock; local schools incorporate Sofö-Sofö sessions into health education; and an annual “Sofö-Sofö Festival” aligns with local culture to celebrate local wisdom and health. A follow-up survey is administered six months post-programme to assess retention of knowledge, continued usage of Sofö-Sofö, and self-reported stamina/health behaviours.

Ethical considerations include informed consent, respect for traditional

knowledge (with credit to elder healers), ensuring safe dosage and disclaiming herbal usage is not a substitute for medical care, and maintaining ecological sustainability (ensuring Sofö-Sofö harvesting is done responsibly).

C. Results of the Service Activity

Over the course of the implementation period at Bawonifaoso Village, the community service programme yielded several key results across three interrelated domains: knowledge & awareness of local medicinal plant usage, behaviour changes in health-/stamina-related practices, and revival of local wisdom in relation to the traditional plant known locally as *Ageratum conyzoides* (commonly called “sofo-sofo” in Nias language). Below we present the results in detail.

1. Knowledge and Awareness Gains

At the baseline survey, many respondents (children, youth, adults) had only limited or partial knowledge of local medicinal plants particularly sofo-sofo its preparation and its role as a tonic or vitality-booster. After the series of workshops, demonstration gardens, mobile outreach and community reading & discussion sessions, we observed a marked increase in awareness. Quantitatively, pre-workshop questionnaire scores of knowledge averaged ~44 % correct responses; post-workshop scores averaged ~78 % correct responses, indicating a nearly 34-point increase in knowledge retention. Qualitatively, participants shared



statements such as: “Now I know the name ‘sofo-sofo’ in our dialect and I know how my grandmother used it for stamina after heavy work,” reflecting deeper cultural reconnection.

The rise in awareness is consistent with broader ethnobotanical findings: for example, a study of the Nias community found 46 types of medicinal plants used across villages, with detailed knowledge being concentrated among elder generations. Another study on local wisdom in medicinal-plant naming documented “sofo-sofo” as one of the ten lexicons in Nias language, thereby underscoring the cultural embeddedness of the plant. Thus our result shows that targeted educational intervention can significantly raise younger generations’ familiarity with local botanical knowledge.

2. Behaviour Changes in Health- and Stamina-related Practices

Beyond awareness, we recorded behaviour changes regarding health practices and use of sofo-sofo. During the twelve-week implementation, community logs showed that 67% of households reported preparing a sofo-sofo infusion or applying a local tonic at least once every two weeks, compared to only 18% at baseline. Additionally, among children and youth, self-reported scores of “I have more energy for school, chores or reading after using the tonic” rose from 21% agreeing at baseline to 59% at end-line. Observationally, the reading/knowledge circle sessions noted fewer complaints of fatigue or lethargy

among participating youths, and parents reported increased stamina for gardening/field work after incorporating traditional tonic use and lifestyle discussions. These changes reflect the literature’s assertion that the use of medicinal plants is not only about physical health but also about embedding behaviour, environment and culture (see, e.g., Dachi & Tambunan 2025).

3. Revival and Transmission of Local Wisdom

One of the most significant results was the revival of local wisdom tied to sofo-sofo. Elders and traditional healers were actively engaged, contributing their knowledge about local names, harvesting practices, and cultural narratives around the plant. During the workshop discussions, several younger participants expressed renewed pride in the local expression “sofo-sofo” and volunteered to document family stories tied to plant usage. The demonstration garden served not only as a site of plant growth but as a community hub for elder youth intergenerational learning. This revival is aligned with studies on local wisdom in herbal naming practices; for instance, the semantic analysis of Nias herbal plant names found that names embed cultural meaning, life-lessons, and ecological awareness. The project, thus, contributed to the intangible cultural heritage of Bawonifaoso Village by creating avenues for knowledge transmission and situating health awareness within a culturally relevant frame.



4. Challenges and Observations

However, results also revealed some persistent challenges. For instance, 33% of households reported that they still did *not* engage regularly with the tonic practice, citing reasons such as lack of time, forgetting, or skepticism about effectiveness. Some youth indicated they preferred modern medicine rather than traditional tonics. Additionally, logistical issues such as supply of sofo-sofo seedlings for the demonstration garden, and adequate water for processing – surfaced in the mobile outreach to more remote hamlets. Nevertheless, these challenges provide important insights for improvement. It appears that while knowledge and initial behaviour change can be achieved, consolidation into long-term habitual practice requires sustained follow-up, local leadership, and mechanisms for monitoring and resource supply.

5. Summary of Outcome Indicators

Following an educational intervention focused on household medicinal plants and intergenerational engagement, significant improvements were observed across multiple indicators. Knowledge scores among participants increased from approximately 44% to 78%, demonstrating enhanced understanding of the properties, preparation, and use of medicinal plants. Correspondingly, the frequency of household tonic usage rose from 18% to 67%, indicating that the acquired knowledge translated into practical, daily applications. Among youth participants, agreement with

the statement that their stamina improved increased from 21% to 59%, suggesting that active involvement in plant-based health practices may positively influence perceived physical well-being. Qualitative observations further revealed strengthened engagement between elders and youth in sharing ethnobotanical knowledge, reinforcing intergenerational transmission of traditional wisdom. Previous studies highlight that ethnobotanical knowledge often diminishes among younger generations unless deliberate educational interventions are implemented. For example, research in Tanzania showed that home-based nutritional education significantly improved household knowledge and practices regarding plant-based nutrition (Pillai et al., 2016). Similarly, participatory approaches involving children and youth have been shown to increase both knowledge retention and practical application of plant knowledge in communities (Grasser et al., 2016). These findings underscore the importance of combining education, practical application, and intergenerational interaction to enhance knowledge, behavior, and subjective health outcomes within communities.

The results of this service activity affirm that community-based literacy and plant-knowledge programmes can effect meaningful change in both health behaviour and cultural awareness. The observed increases in knowledge and tonic usage align with the broader finding that medicinal-plant use remains an active



tradition in Nias (see Zebua et al., 2024). Moreover, the intergenerational knowledge transmission mirrors findings in lexicon studies of traditional herbal medicine in Nias. Our results also contribute to the emerging evidence that plant-based tonics can support stamina, especially when integrated with lifestyle education and community facilitation something less documented in the literature but promising as a local-health-promotion strategy.

The findings of our community service in Bawonifaoso Village reveal several important themes: the revitalisation of local plant-knowledge of Sofö-Sofö, the impact on health awareness and stamina practices, the role of cultural context in health promotion, and the implications for sustainability and cultural heritage. These themes reflect deeper interplays between ethnobotanical knowledge, health behaviour change, and community empowerment.

1. Revitalisation of Local Plant Knowledge

One of the standout results was the renewed interest and knowledge among youth and adults regarding Sofö-Sofö (known locally by that name) as a medicinal herb and tonic. Prior baseline assessments indicated limited detailed knowledge — many knew of “some herbal plants” but not their names, usage methods, or cultural significance. After workshops, demonstrations and participatory planting, the community could articulate the local name, understand preparation methods, and recognise the cultural narratives tied to Sofö-Sofö (e.g., for fever, stamina, vitality).

This revitalisation aligns with findings by Gea & Rahardi (2021) that the lexicon of traditional herbal medicine in the Nias language includes “Sofö-Sofö” and that such lexicons carry cultural-wisdom significance.

This result matters because knowledge transmission of medicinal plants often diminishes across generations if left un-supported. The project’s success in bridging elder knowledge-keepers, youth volunteers and public health concepts suggests an effective model. The co-creation of a “reading corner” or demonstration garden facilitated a hands-on environment for this knowledge transmission, further solidifying the plant-culture link.

2. Health Awareness, Stamina, and Behaviour Change

The project aimed to strengthen health awareness particularly around daily vitality, stamina, and health maintenance rather than treat disease per se. The outcomes show that the community began to integrate plant-based tonic use (Sofö-Sofö), along with lifestyle practices (rest, nutrition, hydration), into their routines. Households reported increased use of the herb, children and youth reported increased energy, and attendance at reading/plant sessions increased. These behaviour changes indicate that combining traditional plant knowledge with health-education can positively influence health mindsets and practices. The scientific literature provides support: Marbun et al. (2021) documented antibacterial activity of Sofö-Sofö leaf extracts (*Acmella* cf) against skin-microbes,



thus giving a pharmacological basis for its traditional use. While our project did not conduct laboratory assays, the local acknowledgement of the herb's utility may be enhanced by such scientific validation. Moreover, research shows that the level of knowledge and perception significantly influences traditional medicine use – for example in Klaten City, a study found knowledge and perception accounted for major usage determinants. Thus our increase in knowledge likely underlies increased usage.

3. Cultural Context and Local Wisdom Integration

A key strength of the programme was situating Sofö-Sofö not just as a health commodity, but as part of local heritage. It was positioned as “our village tonic”, “heritage plant”, and integrated into cultural events and reading-plant sessions where elders shared stories of its use. This cultural framing appeared to boost engagement, foster pride, and link health behaviour with identity. Literature on local wisdom in Nias shows that naming of medicinal plants (e.g., Sofö-Sofö) is not arbitrary names convey meaning, advice, life-lesson, ecological connection. In our programme, this framing helped elevate the herb's status beyond “just a weed” to “our local wisdom”. The interplay of cultural meaning and health awareness is thus critical: when health-promotion is aligned with local knowledge, acceptance and sustainability are enhanced.

4. Sustainability and Challenges

While the results are encouraging, the discussion must also reflect on sustainability and challenges. Some households still did not adopt tonic usage consistently (about one-third at endline), citing forgetfulness, limited time, or preference for modern medicine. The demonstration garden faced seedling supply problems, and the mobile outreach found difficulties reaching more remote hamlets. These issues echo broader observations that traditional-medicine programmes need follow-up, community leadership, resource support and infrastructural access. For sustainability, embedding the programme into village institutions (reading club, school curriculum, annual festival) is promising. Research on conservation-based education in South Nias shows local wisdom values can be institutionalised via schools and clubs. Our model of establishing a “Plant-Knowledge Club” and linking tonic use to local celebration (mission/reformation) may provide such anchoring.

5. Implications for Broader Application

The discussion yields several broader implications. First, community-based health promotion can combine ethnobotanical knowledge, local wisdom and health-education effectively. The Sofö-Sofö case shows that a locally endemic plant, well-embedded culturally, can serve as an entry-point for health awareness (stamina, vitality) rather than disease-only framing. Second, documenting medicinal-plant knowledge (lexicon, usage, preparation) is



vital for preserving intangible cultural heritage and supports health promotion. Third, linking plant-based tonics and lifestyle change strategies (nutrition, rest) may improve health outcomes in rural settings. And finally, sustainability hinges on cultural embedding, resource support, and institutionalisation.

D. Conclusion

The community service programme conducted in Bawonifaoso Village, focusing on the role of Sofo-sofo (*Ageratum conyzoides*) in strengthening health awareness and preserving local wisdom, has yielded significant insights and positive outcomes. The project achieved its dual objective of enhancing community knowledge about the herb's health benefits while simultaneously fostering a sense of pride and cultural continuity among the villagers.

1. Revitalisation of Local Wisdom

One of the most prominent outcomes was the revitalisation and documentation of local knowledge surrounding Sofo-sofo. Prior to the project, many young community members were largely unaware of the cultural significance and practical uses of the plant. Through workshops, demonstration gardens, storytelling sessions, and participatory herbal preparation activities, elders shared detailed knowledge regarding identification, preparation methods, and traditional health applications of Sofo-sofo. These efforts resulted in renewed interest among children and youth, fostering intergenerational knowledge transfer. The

project thus contributed not only to health awareness but also to the preservation of intangible cultural heritage, echoing findings from studies on the role of ethnobotanical knowledge in sustaining community identity.

2. Enhancement of Health Awareness

The intervention led to measurable increases in community awareness regarding preventive health practices and stamina improvement. Participants reported integrating Sofo-sofo consumption into their daily routines, often combining it with balanced nutrition, hydration, and rest. The community expressed appreciation for the dual approach, which combined scientific reasoning (e.g., reported antibacterial and tonic properties of the plant) with cultural narratives. This reinforced the understanding that health is not only a biomedical concept but also culturally contextual, aligning with global research showing that community acceptance and utilization of medicinal plants are closely linked to knowledge and perception.

3. Cultural Integration and Community Engagement

The success of the programme was amplified by its integration into local cultural activities. The positioning of Sofo-sofo as a "heritage tonic" within festivals, school activities, and reading/planting events fostered both social engagement and cultural pride. By situating health knowledge within culturally familiar frameworks, the project increased participation and motivation, reflecting



broader principles in health promotion that emphasize culturally sensitive interventions. Moreover, the approach demonstrated that traditional practices can serve as vehicles for modern health education, effectively bridging local wisdom and contemporary scientific understanding.

4. Sustainability and Long-Term Impact

While the outcomes were promising, challenges remain. Some households did not consistently adopt the use of Sofo-sofo, citing time constraints or reliance on conventional medicine. Additionally, the demonstration garden and seed propagation initiatives faced logistical hurdles. To address these concerns, sustainability measures were recommended, including institutionalizing Sofo-sofo knowledge within local schools, integrating activities into village festivals, and establishing community-led “Plant Knowledge Clubs.” These strategies are essential for maintaining momentum and ensuring that the benefits of the programme endure beyond the intervention period.

Recommendations

1. Institutionalize Knowledge Sharing

Local schools, youth groups, and community centers should integrate Sofo-sofo-based health education into their curricula and activities. This will ensure sustained intergenerational knowledge transfer and encourage healthy practices among the younger population.

2. Expand Demonstration Gardens

The establishment of multiple Sofo-sofo gardens across the village will provide

hands-on learning opportunities, facilitate seed propagation, and encourage wider community engagement.

3. Combine Traditional and Scientific Approaches

Encouraging collaborations with local health practitioners and researchers can validate the medicinal properties of Sofo-sofo, enhancing trust and promoting informed usage.

4. Monitor Health Behaviour Changes

Continuous observation of community health practices related to Sofo-sofo usage will help assess the long-term efficacy of the programme, providing valuable data for future interventions.

5. Leverage Cultural Festivals

Embedding Sofo-sofo knowledge and practices into local cultural events and celebrations will reinforce the herb’s identity as both a health tool and a symbol of local heritage.

6. Community Leadership and Ownership

Empowering local leaders, elders, and volunteers to oversee the initiative will enhance sustainability and accountability. Community ownership ensures that the project is culturally sensitive, contextually relevant, and self-sustaining.

In conclusion, the Sofo-sofo community service programme successfully merged health awareness with cultural preservation. It demonstrated that local wisdom, when leveraged thoughtfully, can strengthen community health, promote active participation, and maintain intangible cultural heritage. By fostering



intergenerational knowledge transfer, integrating cultural values, and providing actionable health guidance, the project presents a model for similar initiatives in other rural contexts. The experience of Bawonifaoso Village highlights the potential for ethnobotanical knowledge not only as a health resource but also as a catalyst for community cohesion, pride, and sustainable cultural development.

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