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Guidelines for implementing the Sufficiency Economy Philosophy (SEP) to enhance the quality of life perception among farmers in Djakotomey District, Republic of Benin

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ABSTRACT: This mixed-methods research investigated the guidelines for implementing the Sufficiency Economy Philosophy (SEP) to enhance the perception of quality of life (QoL) among farmers in Djakotomey District, Republic of Benin. Research instruments, including questionnaires, interviews, focus group discussions, and lessons learned, were utilized to collect data. Participants consisted of two groups: (1) 17 experienced farmers from the Huay Tong community, Mae Wang District, Thailand, and (2) 24 farmers from Djakotomey District, Republic of Benin, who engaged in SEP-integrated vocational and agricultural training programs facilitated by experts from the Thailand International Cooperation Agency (TICA) between 2019 and 2022. The results revealed significant (P<0.05) improvements in farmers' quality of life perceptions in both contexts. In Thailand, scores increased from 1.74±0.104 to 4.67±0.063 (out of 5), while in Republic of Benin, they increased from 1.91±0.239 to 3.97±0.300. A significant (P<0.05) correlation between QoL perception and SEP understanding was observed in both groups, as represented by the equation QoL = 1.320 + 0.663 SEP, with an r^2 value of 0.624. These findings indicated that participation in SEP training significantly enhanced QoL perception. The study identified key guidelines for SEP implementation, including understanding SEP principles, integrating SEP into vocational and agricultural training, promoting knowledge sharing and community empowerment, fostering financial management skills, and fostering partnerships between government and community entities.

Keywords: Sufficiency Economy Philosophy; quality of life; agricultural training; perception; Republic of Benin

Introduction

Quality of life (QoL), comprising health, comfort, and happiness, is widely recognized as a fundamental aspect of individual and community well-being (Beslerová and Dzuričková, 2014). However, recent global circumstances, particularly the COVID-19 pandemic, have intensified stress and uncertainty, negatively impacting QoL on a global scale (United Nations Development Programme (UNDP), 2022). This crisis has underscored the critical need to enhance QoL, especially in rural areas, where communities are particularly vulnerable. In response to this pressing challenge, the Sufficiency Economy Philosophy (SEP), advocated by King Rama IX of Thailand, has emerged as a framework for sustainable development. SEP emphasizes the importance of balancing social,

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environmental, economic, and cultural factors to promote community well-being (Prayukvong et al., 2023). Research by Wattanakornsiri et al. (2020) highlighted SEP as a tool for enhancing QoL and human development, particularly in agricultural contexts (Jeerat et al., 2022), aligning with the Sustainable Development Goals (SDGs). In similar literature for example Jeerat et al. (2022) recently reported that knowledge and understanding importantly facilitate the adoption of the SEP principle, leading to improvements in livelihoods and environments. At present there is no report available on the SEP implementation in Benin. This research subsequently was undertaken to bridge such knowledge gap and to provide opportunities for people in Benin to learn and to adopt the SEP principle.

To address the challenges and promote sustainable agricultural practices, the Thailand International Cooperation Agency (TICA), Thailand, initiated the implementation of SEP in vocational and agricultural training programs in the Djakotomey District of Republic of Benin between 2019 and 2022. This endeavor aimed to equip farmers with the necessary tools to confront the aforementioned challenges, minimize climate change, reduce food insecurity, and alleviate poverty. Consequently, this study is conducted to investigate the guidelines for implementing SEP and its impact on enhancing QoL perception among farmers. Through the utilization of these insights, the present study endeavors to assess both the achievements and obstacles encountered in the implementation of SEP, aiming to offer practical directives for the integration of SEP within the agricultural sector of the Republic of Benin.

Materials and methods

Population and sample

The study's participants comprised farmers from Huay Tong community, Mae Wang District, Chiang Mai, Thailand, and Djakotomey District, Republic of Benin. The population of Djakotomey District included 43 farmers who had participated in agricultural activities under SEP, provided by TICA from 2019 to 2022. These farmers were distributed across Betoumey, Djakotomey 1, Djakotomey 2, Kinkinhoue, and Sokouhoue communities within Djakotomey District. In Thailand, the participant pool consisted of 138 farmers who had previously implemented and gained experience with SEP in their agricultural and daily practices.

The study employed a purposive sampling approach to select farmers for the sample group both in Thailand and in Benin through the TICA database. In Thailand, the sample group comprised 17 household heads chosen based on their willingness to participate, availability, and language proficiency. In Djakotomey, 24 heads of households were selected for interviews from the aforementioned locations, taking into consideration factors such as time, transportation, participant willingness, and availability.

Tools and Data Collection

Questionnaires were employed for data collection, comprising three distinct sections: personal demographics; socioeconomic factors of the respondents; and experiences and lessons derived from implementing SEP among 24 and 17 participants in the Republic of Benin and Thailand, respectively. QoL questions were adapted from the UNDP Human Development Indicator (United Nations Development Programme (UNDP), 2022). Subsequently, focus group discussions were conducted to gather detailed information regarding the essential success elements for implementing SEP. Additionally, ongoing SEP practices within the region were assessed through

the utilization of observation techniques and the documentation of field notes. This method was complemented by a thorough review of relevant literature, aimed at enhancing and contextualizing the primary data collected.

In the Djakotomey community of the Republic of Benin, data collection occurred online in collaboration with a representative from the Thailand International Cooperation Agency (TICA) and local researchers. The researcher employed social media platforms to engage with farmers and gather additional information. Conversely, in Huay Tong village, Thailand, data were gathered through a combination of observational methods and interviews. Moreover, focus group discussions were utilized to determine both the achievements and challenges associated with SEP implementation.

The research received approval from the Institutional Review Board of Chiang Mai Rajabhat University, Thailand, under an Exemption Review process, in accordance with both international ethical standards and pertinent national laws and regulations. The certificate number issued is IRBCMRU 2023/359.30.11.

Data Analysis

Qualitative data, primarily obtained through interviews, observations, and a review of relevant literature, were analyzed employing qualitative methodologies including Content Analysis, Causal Analysis, and Network Analysis following the relevant references including Paton (2002). Conversely, quantitative data, primarily obtained from questionnaires, were analyzed utilizing descriptive statistical methods including frequency and percentage distributions, mean, standard deviation, as well as inferential statistics including Chi-Square, t-test, Probability *P*-Value at 0.05, and regression coefficient.

Results

Socio-demographic and Economic Data of a Community in Djakotomey District, Republic of Benin and Huay Tong Community, Thailand

The majority of participants from both communities in the Republic of Benin and Thailand were identified as household heads, with 54.2% in Djakotomey District and 52.9% in Huay Tong village, and all leaders were men.

In terms of education, there were notable differences between the two groups. In Djakotomey District, nearly half of the farmers (45.8%) had never attended school, whereas participants in Huay Tong village had completed formal education (100%). Furthermore, access to microcredit for agricultural and commercial purposes was reported by 25.0% of Djakotomey District participants, a significantly lower figure compared to the 70.6% of Huay Tong village participants who had such access. Both communities were characterized by a prevalence of smallholder farmers who played significant roles in sustaining the local food system. In Djakotomey District, 75.0% of members cultivated land plots of less than one hectare, indicating a substantial presence of small landowners. Conversely, Republic of Benin had a higher proportion of small landowners compared to Huay Tong village, with 47.1% of farmers falling into this category. Regarding extension training, all participants (100.0%) in both communities were actively engaged as cooperative members.

In terms of economic status, Djakotomey District exhibited a lower proportion of participants with vocational training (45.8%) compared to Huay Tong village (70.6%). Furthermore, the employment or self-employment rate among Djakotomey District participants was markedly lower (29.2%) than that of Huay Tong village (58.8%). Additionally, only 37.5% of Djakotomey District participants reported having sufficient income, with an average

monthly income of $74.14 USD, significantly lower than the average reported by Huay Tong village participants ($223.3 USD). Furthermore, there was a disparity in savings behavior between the two communities, with 52.9% of members in the Huay Tong village reporting savings of their income, compared to only 25.0% among members in the Djakotomey District.

Understanding SEP Concepts among Participants in Djakotomey District, Republic of Benin and Huay Tong Village, Thailand

Participants in Djakotomey District demonstrated an intermediate understanding of SEP concepts (average = 4.06± 0.382), whereas those in Huay Tong village showed a significantly higher level of understanding (t-test = 15.311, $P < 0.05$) with an average score of 4.97± 0.099 (out of 5). This represented the amount of time needed to implement the concept in daily life in Republic of Benin.

The SEP was introduced to Republic of Benin approximately five years ago, whereas it was adopted earlier in Thailand. This temporal discrepancy contributed to the lower level of SEP knowledge in Republic of Benin. The long-term success of SEP in Republic of Benin relies on its continual implementation and integration into the cultural and socioeconomic norms of the community. This objective could be achieved through ongoing participation in agricultural training programs in the Djakotomey District community, supported by TICA. Moreover, this learning model has the potential to be extended to other regions of the country.

In Thailand, King Rama IX visited Huay Tong village in 1979 to address a number of challenges, including food shortages and infertile land. The community adopted SEP due to its anticipated benefits for local development and livelihood enhancement. As the first generation implemented SEP and observed its positive effects, they shared this knowledge with successive generations. This knowledge transmission resulted in tangible outcomes, leading to a deep understanding of SEP and its application across every generation in the Huay Tong community.

People's Quality of Life through SEP Practices in Djakotomey, Republic of Benin and Huay Tong Village, Thailand.

The study conducted in Djakotomey District, Republic of Benin, revealed a significant improvement ($P<0.05$) in farmers' perception of Quality of Life (QoL) following SEP training, with QoL scores increasing from 1.91±0.239 to 3.97±0.300 **(Table 1)**. Initially, participants had lower levels of happiness across various dimensions, including housing, financial stability, interpersonal relationships, and overall well-being. However, post-training, remarkable progress was observed in these areas. The results underscored a substantial enhancement in the QoL of Djakotomey District residents, attributed to their agricultural education and understanding of SEP principles.

Similarly, significant improvements were observed in the QoL perceptions of farmers in Huay Tong village over time, with scores increasing from 1.74±0.104 to 4.67±0.063 (T-test = 112.58, df,16, $P<0.05$). The implementation of SEP in Huay Tong village dramatically improved villagers' QoL by encouraging self-sustainability, organic farming techniques, financial stability, and environmental conservation. The success of SEP implementation in Huay Tong village can be attributed to the Royal Project, extension services, and knowledge-sharing initiatives, all of which played significant roles in improving the community's way of life, particularly enhancing the QoL for its residents. Furthermore, a strong association was found between the perception of QoL and the understanding of SEP principles. The coefficient of determination (r2) was at 0.624, indicating that 62.4% of the variation in QoL could be

explained by the understanding of SEP principles. This relationship was statistically significant ($P<0.05$). The regression equation was QoL = 1.320 + 0.663 SEP.

Table 1 Comparison of quality of life perceptions before and after vocational and agricultural training under the Sufficiency Economy Philosophy (SEP) concept among participants in Djakotomey District, Republic of Benin

No.	Variables	Before Mean (S.D.)	After Mean (S.D.)	t-test	*Significant level*
	Economic				
1	You are happy with the quality of the house you live in.	1.71 (0.690)	3.62 (1.345)	6.379	*P*<0.05
2	Your income is sufficient for you and your family.	1.33(0.702)	4.00 (0.000)	17.563	*P*<0.05
3	Your income allows you to save money.	1.71 (0.690)	4.00 (0.000)	16.265	*P*<0.05
14	You engage in agricultural activities in moderate way according to your capacity.	2.00 (0.000)	4.04 (0.204)	17.563	*P*<0.05
15	You do each agriculture activities with reason.	1.42 (0.504)	4.00 (0.000)	16.265	*P*<0.05

Table 1 Comparison of quality of life perceptions before and after vocational and agricultural training under the Sufficiency Economy Philosophy (SEP) concept among participants in Djakotomey District, Republic of Benin (Continued)

No.	Variables	Before Mean (S.D.)	After Mean (S.D.)	t-test	*Significant level*
	Economic				
17	You have confidence in dealing with future agricultural challenges.	1.62 (0.495)	4.00 (0.000)	23.527	*P*<0.05
18	You always have a plan for running agricultural farm with risk management.	2.41 (0.830)	4.04 (0.204)	9.094	*P*<0.05
	Social/Culture				
4	You always share with your neighbors.	1.29 (0.464)	4.00 (0.000)	28.576	*P*<0.05
9	You are satisfied with your personal relationship with your family members.	1.87 (0.338)	4.00 (0.000)	30.815	*P*<0.05
12	You are satisfied with your knowledge sharing on agricultural production with neighbors.	2.00 (0.000)	3.25 (0.989)	6.191	*P*<0.05
16	To enhance the quality of agricultural production in the village, honesty and sincerity are necessary to improve your quality of life.	4.04 (0.204)	4.95 (0.204)	15.906	*P*<0.05
	Environment				
10	The forest can fulfill the necessary needs of the villagers and protect them from environmental degradation by planting.	1.41 (0.504)	4.62 (0.495)	26.720	*P*<0.05
11	The quality of soil on your farm is improved through the use of fewer chemicals, organic fertilizers, and compost.	1.41 (0.504)	3.25 (0.989)	9.326	*P*<0.05
13	You can construct an irrigation system on the farm for water supply by applying local knowledge and wisdom.	1.62 (0.495)	3.50 (0.885)	6.379	*P*<0.05
	Food/Health				
5	Your family's daily diet is good for your family's health.	2.08 (0.408)	4.00 (0.000)	23.000	*P*<0.05
6	You have good physical and mental health.	2.66 (0.565)	4.00 (0.000)	11.568	*P*<0.05
7	You have enough food for your family members.	1.95 (0.550)	3.25 (0.989)	6.334	*P*<0.05
8	Your daily meal contains the necessary nutrition and diversity.	2.08 (0.408)	4.00 (0.000)	23.000	*P*<0.05

Note: Much better = 4.51-5.00; Better = 3.51-4.50; Neutral = 2.51-3.50; Lower = 1.51-2.50; Quite lower = 1.00-1.50.

The Impact of Vocational and Agricultural Training under SEP Principles on Agricultural Practices and Environment of the Community

In Thailand, this study highlighted the influential role of the royal project leadership in Huay Tong village, which has led to significant improvements in environmental quality. Particularly emphasized is the active engagement of, women within the community, who collaborated in groups throughout the year, especially during periods of drought, to participate in forest cleanup initiatives. These efforts contributed to conserving biodiversity, decreasing the risk of wildfires, and improving overall ecological health. Additionally, community members diligently collected various types of plastics from the forest, carefully separating chemical plastics from organic ones. The chemical plastics were subsequently disposed of in an environmentally friendly manner, while the organic materials were recycled, thereby reducing the overall environmental footprint and promoting principles of sustainability and circular economy. The implementation of effective waste management strategies further strengthens efforts aimed at environmental enhancement.

In Republic of Benin, the soil quality on farms was improved through the reduction of dependency on chemical inputs and the adoption of organic fertilizers and composting techniques. These sustainable farming practices yielded improvements not only in agricultural productivity but also in soil health and fertility, thereby fostering long-term sustainability and resilience within agricultural systems. Additionally, organic farming practices in Djakotomey District typically avoided the use of synthetic pesticides, herbicides, and fertilizers, thus reducing the risk of environmental pollution. Techniques including crop rotation, cover cropping, and natural pest control methods employed in organic production further contributed to the preservation of soil health and biodiversity conservation.

Moreover, organic farming predominantly relied on natural methods for pest and disease control, thereby reducing the need for synthetic chemicals that may have harmful environmental consequences. The emphasis on soil conservation practices, including the utilization of organic matter, compost, and green manure, fostered improvements in soil structure, water retention, and overall soil health, contributing to the long-term sustainability and economic viability in agricultural systems. Furthermore, the implementation of a localized irrigation system served as a prime example of integrating indigenous knowledge and wisdom into water resource management practices. This approach ensured a consistent water supply for agricultural activities while effectively addressing environmental impacts such as soil erosion and water pollution. By doing so, organic farming not only promoted ecosystem health but also enhanced overall sustainability.

Regarding environmental impact, the preservation of the local forest emerged as a pivotal asset in fulfilling the fundamental needs of villagers while simultaneously safeguarding them from environmental degradation through strategic tree-planting initiatives. The preservation and sustainable management of this natural resource not only provided livelihood opportunities but also contributed to ecosystem stability and biodiversity conservation. The widespread e adoption of SEP principles in agricultural practices and environmental management in Djakotomey District, Republic of Benin, has led to improvements in farmers' livelihoods and promoted environmental sustainability and resilience in the face of climate change and other challenges.

Successful Lessons Learned in Enhancing People's QoL Through SEP Practices in Thailand

Lessons learned at Huay Tong Village, Thailand, marked significant accomplishments in implementing SEP and enhancing the quality of life for the residents. Therefore, the study findings revealed crucial lessons, including capacity building facilitated through participation in training programs, notably through the Royal Project. Involvement in Royal Project activities emerged as a crucial avenue for farmers to acquaint themselves with new agricultural techniques and technologies, thereby bolstering their economic, social, and environmental well-being.

The findings indicated a substantial increase ($P < 0.05$) in participants' quality of life following the intervention, across all variables and for individuals. Moreover, knowledge sharing on agricultural practices, herbal medicine, and food within the community played a pivotal role in fostering a strong community and promoting sustainable agriculture. The production of organic fertilizers emerged as a strategy to encourage sustainable agriculture and reduce production costs. By embracing organic fertilizers, participants have actively contributed to the promotion of environmentally-friendly agricultural practices, aligning with the principles of SEP. Enhanced financial management has also emerged as a critical aspect of ensuring financial stability among community members, emphasizing the importance of balancing expenditures and income for long-term economic well-being.

Guidelines for the Adoption of SEP to Improve QoL in the Republic of Benin

Drawing from the lessons learned from Huay Tong village and the factors that affecting SEP adoption in Republic of Benin, the appropriate guidelines for enhancing QoL under SEP involves several key considerations. Firstly, there is a paramount need for a comprehensive understanding and adoption of SEP principles to drive sustainable development, emphasizing the significance of balancing economic, social, and environmental aspects in order to achieve sustainable development. Secondly, the implementation of vocational and agricultural training programs deeply rooted in SEP principles serves as a cornerstone for reducing dependence on chemical fertilizers, promote eco-friendly farming practices, increase biodiversity, improve crop resilience, and contribute to environmental conservation. Thirdly, promotion of knowledge sharing and community empowerment through regular community meetings or workshops is pivotal, facilitating the dissemination of effective farming techniques, herbal medicine practices, and sustainable food production methods. This continual knowledge-sharing will foster a collaborative learning culture in the community, resulting in self-reliance and empowerment. Fourthly, the development of financial management skills is imperative for ensuring stability, necessitating workshops on financial literacy and management to align expenditures with income, while advocating for savings and investment strategies to safeguard long-term financial security and resilience against economic fluctuations. Lastly, fostering partnerships between government and community entities is vital, advocating for increased government involvement through extension services and collaborative efforts with local authorities to sustainably guide agricultural practices. Additionally, the formation of community-based agricultural organizations or cooperatives fosters networking and collaboration among members, reinforcing social ties and enabling collective problem-solving.

Discussions

The study's findings provide valuable guidelines for implementing the SEP in Republic of Benin, confirming that the concept played a significant role in improving the quality of life in the country. To achieve that target, the research emphasizes the importance of understanding SEP principles, which have been shown to positively impact

QoL in both Republic of Benin and Thailand, aligning with King Rama IX's original intent in introducing SEP. This aligns with existing literature, including studies by Bergsteiner and Dharmapiya (2016); Prabripu and Wiboonpongse (2020), and Prabripu (2023), which confirm the positive correlation between SEP interventions and well-being across various domains. It is also consistent with the findings of Barua and Tejativaddhana (2019), who confirmed a positive correlation between SEP interventions and well-being across six developing themes: education, social, economics, agriculture, environment, and health. Additionally, Piyapong and Chaweewan (2016) emphasized that the residents practicing SEP in their daily lives experienced a better quality of life, illustrating community acceptance of SEP as an innovation consistent with Rogers' Diffusion of Innovation Theory (2003).

Furthermore, the success of adopting SEP to enhance QoL, as evidenced by lessons learned from Huay Tong village, resonates with the findings of Jeerat et al. (2022), who emphasized the importance of beliefs in SEP's purpose for sustainable agriculture. They highlighted the significance of believing in the purpose of SEP, alongside confidence in the efficacy of SEP principles and the support of respected individuals, as crucial factors in applying SEP to improve environmental quality.

Additionally, the proposed guidelines for SEP adoption in Republic of Benin correspond with the strategies outlined by Promjisa et al. (2024), for integrating SEP into the lifestyle of youth in the Greater Mekong Sub-region. These strategies emphasized the development of SEP learning resources and knowledge sharing networks at various levels to promote SEP-based living. The findings also align closely with Wongnaya and Chaowakeeratiphong's (2013) comprehensive study, which outlined eleven strategies for implementing SEP principles within the Kamphaengphet and Tak Province villages. These strategies highlighted the prioritization of SEP principles and the fostering of knowledge exchange networks across various administrative levels.

The success observed by Panyasing et al. (2022) further validated the efficacy of SEP in enhancing agricultural practices, leading to self-reliance and environmentally friendly approaches guided by sufficiency economy philosophy. Additionally, the study by Liao et al. (2022) underscored the importance of enhancing the learning capabilities of individual farmers regarding environmental awareness and sustainable agricultural practices. It emphasized the necessity of equipping farmers with knowledge about the local environment, traditional practices, and scientific advancements, which were essential for effective natural resources management. This can include information about sustainable farming methods, biodiversity conservation, and water resource management. In this instance, in terms of health education and agricultural practices, both the Royal Project and public healthcare in Nong Tao village, established by King Rama IX, collaborated on the assessment of chemical concentrations in the bloodstream. They offered guidance to individuals with high chemical levels, recommending the utilization of herbal remedies. The annual chemical blood checks conducted by the public healthcare system in collaboration with the Royal Project represent a proactive and collaborative endeavor aimed at enhancing the well-being of the ten villages within the Thung Luang Royal Project region.

Conclusion

The research undertaken shows that farmers participated in vocational and agricultural training under SEP concept in Djakotomey District, Republic of Benin, significantly improved their perception of QoL. The knowledge evidently supports importance of knowledge and understanding to adopt the SEP principle. In addition, this positive

impact extended beyond mere perception, as evidenced by tangible socioeconomic and environmental advancements facilitated by the adoption of SEP principles. Through practices such as organic farming and the production of organic inputs, farmers were able to reduce production costs while simultaneously increasing their income. This is not only enhanced their economic well-being but also contributed to environmental sustainability. Furthermore, the active involvement of farmers and the support of extension services within the community were instrumental in promoting sustainable agricultural practices aligned with the broader objectives of the Sustainable Development Goals (SDGs).

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