Journal of Family Sciences **E-ISSN: 2460-2329**
2023, Vol. 08, No. 02, 190-203

Cultivating Sustainability: Exploring the Relationship between Homestead Gardening, Land Property, and Family Economic Pressure in Household with Stunting Children

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Abstract

The impacts of climate change exacerbate the problems of food insecurity and malnutrition, especially child stunting. This study aims to characterize households with stunted children and explore the relationship between yard agroecosystem management strategies, yard ownership, and family economic stress. The study was conducted among 68 households with stunted children in Sumedang District, West Java, selected using purposive sampling. The results found that only 11.7 percent had a dedicated yard with a low level of cultivation and utilization of agrobiodiversity. Correlation analysis showed that the husband's education level was significantly positively associated with yard ownership and utilization. The husband's age and family size were significantly positively related to objective economic pressure. The wife's education and per capita income were significantly negatively related to objective economic pressure. Meanwhile, subjective economic pressure was significantly negatively related to per capita income and significantly positively related to objective economic pressure.

Keywords: childhood stunting, climate change impacts, economic vulnerability, family empowerment, homestead agroecosystems

Abstrak

Dampak perubahan iklim memperburuk masalah ketidakamanan pangan dan malagizi, terutama stunting pada anak. Penelitian ini bertujuan untuk mengkarakterisasi rumah tangga dengan anak stunting dan menjelajahi hubungan antara strategi pengelolaan agroekosistem pekarangan, kepemilikan pekarangan, dan tekanan ekonomi keluarga. Penelitian ini dilakukan pada 68 rumah tangga dengan anak *stunting* di Kabupaten Sumedang, Jawa Barat yang dipilih menggunakan metode *purposive sampling*. Hasil penelitian menemukan hanya 11,7% yang memiliki pekarangan khusus dengan tingkat kultivasi dan pemanfaatan agrobiodiversitas yang rendah. Analisis korelasi menunjukkan bahwa tingkat pendidikan suami berhubungan positif signifikan dengan kepemilikan dan pemanfaatan pekarangan. Usia suami dan besar keluarga berhubungan positif signifikan dengan tekanan ekonomi objektif. Lama pendidikan istri dan pendapatan per kapita berhubungan negative signifikan dengan tekanan ekonomi objektif. Sementara itu, tekanan ekonomi subjektif berhubungan negative signifikan dengan pendapatan per kapita dan berhubungan positif signifikan dengan tekanan ekonomi objektif.

Kata kunci: dampak perubahan iklim, stunting anak, agroekosistem pekarangan, kerentanan ekonomi, pemberdayaan keluarga

Introduction

The pervasive challenges of hunger and malnutrition predominantly afflict populations in developing nations marked by suboptimal living conditions (FAO, 2010). With over half a billion people globally grappling with chronic food insecurity, projections indicate a compelling need for a 70 percent increase in global food production by 2050 to satisfy the daily caloric requirements of the average world population (Johnson-Welch et al., 2000). In developing nations, poverty and stunting emerge as formidable adversaries. The socioeconomic landscape of Indonesia, for instance, witnessed a surge in the number of impoverished individuals during the COVID-19 pandemic, reaching 26.42 million people (9.78%) in March 2020 and escalating to 27.55 million people (10.19%) in September 2020. Subsequent fluctuations occurred, with figures standing at 27.54 million people (10.14%) in March 2021, decreasing to 26.50 million people (9.71%) in September 2021 and further declining to 26.16 million people (9.54%) in March 2022 (BPS, 2022). Pamungkasih et al. (2021) elucidated the utilization of substitution patterns by individuals facing economic challenges, altering dietary menus and adjusting eating intensity patterns, thereby impacting the growth of toddlers.

In the Indonesian landscape, where the number of children under five is projected to be 15,796,632 in 2022, with 8.4 percent categorized as stunting, interventions become imperative. Although the number of stunting toddlers is anticipated to decline in 2023, the current prevalence demands attention, especially in regions like West Sulawesi Province, which exhibits the highest stunting percentage among the 38 provinces (Bangda Kemendagri, 2023). Hermanto (2015) stated that underscores the persistent challenge of poor food stability in Indonesia, attributing it to high food prices and fluctuations, largely stemming from dependence on imported staple foods. Chaireni et al. (2020) further identify the burgeoning population against diminishing agricultural land due to conversion or functional changes as exacerbating this challenge.

Strategies promoting the production and productivity of food commodities are essential to address the escalating demand for food (Sumarlin et al., 2009). However, the pursuit of agricultural innovation contends with escalating challenges posed by climate change and natural resource degradation (Niñez, 1987). Home gardens emerge as integral components of agricultural and food production systems, offering a resilient response to hunger and malnutrition amidst the global food crisis (Puri & Nair, 2004). Particularly in low-income strata, families view gardens not only as a nutritional resource but also as a source of income, prompting efforts to minimize expenses (Al-Dala'een, 2018).

In Indonesia, optimizing yard land for agriculture has gained traction, with initiatives such as composting and hydroponics enhancing productivity even in limited spaces (Ashari et al., 2012; Surtinah, 2018; Thesiwati, 2020). Collaborative efforts involving residents, community leaders, universities, and government officials have demonstrated potential in maximizing the use of vacant land for planting essential crops, solidifying home gardens' pivotal role in local food systems and agricultural landscapes across developing countries, including Indonesia (Muttaqin et al., 2019).

According to this contextual background, a critical knowledge gap pertains to the utilization of homestead resources, especially in families with stunted children, warranting a comprehensive investigation. This study endeavors to delineate the characteristics of households with stunted children, evaluating economic pressures, land ownership patterns, and the economic significance of homesteads. Additionally, it seeks to ascertain the intricate interplay between family attributes, property rights, and the

economic value of homesteads in influencing overall economic pressures, thus contributing to a nuanced understanding of sustainable practices amidst challenges related to stunting child populations.

Methods

Participant

Aligned with the thematic scope of "Cultivating Sustainability: Exploring the Relationship between Homestead Gardening, Land Property, and Family Economic Pressure in Households with Stunting Children," this research adopts a quantitative, cross-sectional study design employing a descriptive approach. The study endeavors to address a critical knowledge gap by elucidating the characteristics of households with stunting children and unraveling the nuanced relationship between ownership and use of a yard and family economic pressure in the Sumedang District of West Java, Indonesia.

In consonance with the study's objectives, a survey was conducted encompassing 68 households with children under the age of five in the Tanjungsari District, focusing on five specific villages: Gudang, Jatisari, Pasigaran, Kadakajaya, and Kutamandiri. The selection of this location was guided by purposive sampling, taking into account the prevalence of stunting children. West Java, positioned as the 23rd province out of 38 with 6.3 percent of stunting toddlers, provides a contextual backdrop, emphasizing the pertinence of investigating sustainable strategies in this regional context (Ministry of Internal Affairs, 2023).

Measurement

Family characteristics: Parental age, length of education, employment status, per capita income, family size, and home ownership.

Ownership and use of the Yard: The household garden is a small-scale production system that supplies plants and animals for consumption and valuable goods that are not obtainable, affordable, or available through retail markets, cultivation of fields, hunting, gathering, fishing, and wage-earning (Galhena et al., 2013). The position of household gardens is generally close to where the owner lives because it feels more comfortable and easier to maintain. This question was developed based on the opinions of Galhena et al. (2013) and Irwan et al. (2018), namely how to use the Yard, understanding its function, and other wishes regarding its use. Yard identification data includes the number of plants, type of plant, and yard area. The plant function categories are ornamental plants, vegetables, herbs/spices, tubers, and perennials/forest plants. Ownership and use of the Yard consist of 13 questions developed by researchers. The questions include four closed questions with answers of 0= no and 1= yes. Meanwhile, the remaining nine questions were open-ended. These questions include, among other things, the size of the Yard owned, the form of use, the type of plants planted, the number of harvests per year, the use of the harvest, and obstacles in utilizing the Yard.

Economic pressure: Economic pressure is a multidimensional concept, including objective aspects and subjective of employment and income. Objective economic pressure in this study includes per capita income, status employment, income comparison, expenses, and the debt-to-asset ratio. Subjective economic pressure in this study is a feeling/experience towards family economic pressure or difficulties (Raharjo et al., 2015). Economic pressure was measured using a questionnaire developed by Raharjo et al. (2015), which consists of 23 questions with a Cronbach's alpha value of 0.909. The economic pressure dimension consists of objective economic pressure and subjective

economic pressure. Objective economic pressure consists of 5 indicators, namely (1) per capita income, (2) wife's employment status, (3) husband's employment status, (4) comparison of income and expenses, and (5) comparison of debt and assets. Subjective economic pressure consists of 18 questions and is measured based on the family's perspective regarding perceived economic difficulties. This variable was measured using a 3-point Likert scale (1=never, 2=sometimes, and 3=often).

Analysis

The primary data processing included data entry into Microsoft Excel, editing, coding, cleaning, and scoring. Descriptive statistics were used in Microsoft Excel to analyze sample characteristics such as frequencies and percentages related to household characteristics, ownership and use of the Yard, and family economic pressures. The data was then processed using Statistical Product and Service Solutions (SPSS) version 26 for Windows. Correlation analysis was conducted using SPSS version 26 to identify 1) the relationship between family socioeconomic characteristics and home garden management practices, 2) the relationship between family socioeconomic characteristics and economic pressure, and 3) the relationship between home garden management practices and economic pressure. After cleaning and scoring, descriptive and relationship tests between variables were carried out. Furthermore, economic pressure is categorized based on cut-off points according to Raharjo et al. (2015), namely low (<40.00), medium (40.01-70.00), and high (70.01-100.00).

Findings

Family Socioeconomic Characteristics

Family characteristics consist of the wife's age, husband's age, wife's years of education, husband's years of education, wife's occupation, husband's occupation, family size, per capita income, and home ownership. Over half are aged 26 to 35, averaging 31.4 years. Meanwhile, the average age of husbands is 35.3 years, with almost half being over 36 years old. Furthermore, more than half of the wives and husbands have low education, with almost a third of the wives and husbands having only completed elementary school. Three-quarters of wives (mothers) are housewives (IRT), with almost a third of wives having primary education. The type of work of husbands (fathers) is quite diverse, and more than a third are workers. More than half of the respondents were in the small family category. The per capita income is in the range of IDR 40,000 to IDR 2,500,000, while the average is IDR 716,640.5. Of the ten respondents, two were still categorized as low-income families, with more than a quarter not having their own house (Table 1).

Table 1. Characteristics of families' socioeconomic factors

Category	n	%
Wife's Education Length		
Elementary school (6 years)	21	30.9
SMP/MTS (9 years)	23	33.8
SMA/SMK/MA (12 years)	21	30.9
≥ D1 (≥ 13 years)	3	4.4
Total	68	100.0
Min-Max (years)	6-16	
Mean ± SD	9.3 ± 2.8	

Continue from Table 1

Category	**n**	**%**
Husband's length of education		
Elementary school (6 years)	23	33.8
SMP/MTS (9 years)	15	22.1
SMA/SMK/MA (12 years)	21	30.9
≥ D1 (≥ 13 years)	9	13.2
Total	68	100.0
Min-Max (years)	6-16	
Mean ± SD	9.8 ± 3.3	
Wife's Age		
<26 years old	15	22.1
26-35 years old	35	51.5
≥36 years old	18	26.5
Total	68	100.0
Min-Max (years)	18-48	
Mean ± SD	31.4 ± 7.1	
Husband's age		
<26 years old	8	11.8
26-35 years old	28	41.2
≥36 years old	32	47.1
Total	68	100.0
Min-Max (years)	21-73	
Mean ± SD	35.3 ± 9.4	
Mother's occupation		
Housewife (IRT)	51	75.0
Businessman	10	14.7
Laborer	2	2.9
Random	5	7.4
Total	68	100.0
Father's occupation		
Doesn't work	2	2.9
PNS/TNI/POLRI/BUMN	4	5.9
Private employees	8	11.8
Businessman	11	16.2
Laborer	26	38.2
Farmers/Ranchers/Fishermen	3	4.4
Random	10	14.7
Driver/Ojek	4	2.9
Total	68	100.0
Family Size		
Small family (0-4 people)	44	64.7
Medium family (5-7 people)	23	33.8
Large family (≥ 8 people)	1	1.5
Total	68	100.0
Min-Max (years)	3-8	
Mean ± SD	4.4 ± 1.2	

Continue from Table 1

Category	n	%
Income per capita		
≥ IDR 360,054 (Not Poor)	55	80.9
< IDR 360,054 (Poor)	13	19.1
Total	68	100.0
Min-Max (years)	40,000 – 2,500,000	
Mean ± SD	716,640.5 ± 524,699.2	
Homeownership		
Rent	5	7.4
Lives with extended family	14	20.6
One's own	49	72.0
Total	68	100.0

Economic Pressure

Based on the results of descriptive tests, more than half of families' economic pressure is in the medium category, with an average index of 47.1. Almost half of the family's objective economic pressure is in the medium category, while for subjective economic pressure, more than half is in the medium category with an average index of 46.7. Based on the distribution of answers on objective economic pressure, in almost three places, mothers do not work, and fathers have precarious jobs. More than half of respondents have debts that are less than 50 percent of total assets. Furthermore, judging from the distribution of subjective economic pressure answers, more than half of the respondents felt that they sometimes experienced financial difficulties and did not have enough money to buy daily food; almost half also often feel that their family income is not sufficient for their family's needs, and sometimes even go into debt to buy necessities (Table 2).

Table 2. Economic pressure on families with stunting children

Economic Pressure	Category						Min-Max	Mean ± SD
	Low		Medium		High			
	n	%	n	%	n	%		
Objective Economic Pressure	31	45.6	33	48.5	4	5.9	10.0 -90.0	48.4± 17.0
Subjective Economic Pressure	26	38.2	37	54.4	5	7.4	00.0 -88.9	46.7± 20.7
Total Economic Pressure	23	33.8	41	60.3	4	5.9	4.35 -87.0	47.1± 18.7

Ownership and Use of Yards

The results showed that out of 68 families, only 5 families (7.4%) were still renting a place to live, 14 families (20.5%) lived with extended family, and 49 families (72.05%) already owned their own house. Then, only 8 families had a yard, and the rest did not have a yard. The families who have a yard are 6 of them who live with extended family, while the other two live in their own house. The size of the Yard varies from 0.5 m2 to 16 m2.

Based on the results of interviews and observations, it is known that 6 out of 8 families who have yards have used them. Families who use the Yard plant it with plants, and some also raise poultry. The types of plants planted are 1) ornamental plants

(aglaonema, cactus, roses, begonias, taro flowers, Janda Bolong flowers, mother-in-law's tongue plants, and wave of love plants), 2) vegetables (lettuce and spring onions), 3) fruit-bearing plants (mango, guava, and bananas), and 4) Secondary crops (cassava). Meanwhile, the reasons families choose this type of plant are different, namely 1) they are happy with the plant, 2) it is easy to cultivate, 3) it can be consumed, and 4) it grows by itself.

Economically, some plants planted have economic value, and some do not. Those with no economic value, namely ornamental plants, only have artistic value and beautify the Yard. For those with economic value, plants such as vegetables are generally for personal consumption, although some are sold. Examples of plants being sold are lettuce, which is harvested six times a year, and leeks, which are harvested four times a year. The plants consumed are used as additional food (snacks), side dishes, and kitchen spices. For example, cassava is processed into snacks for the family.

Meanwhile, the yard produce that is sold is usually sold at home. The price is IDR 5,000/bunch of salad, IDR 2,000/bunch of green onions, and IDR 50,000 - IDR 80,000/head of poultry. The harvest from this Yard is used for trading capital and daily needs. The Yard is looked after by the mother's parents, who have standing children (grandmother and grandfather). The obstacles experienced in managing the Yard vary. Generally, it is in maintenance. Plants often rot and are eaten by animals and other pests. Apart from that, temperatures that are too hot and the intensity of sunlight can damage plants.

The Relationship between Family Characteristics, Yard Ownership, and its Use, and Economic Pressure

Based on the results of the correlation test showed that family characteristics, namely the husband's years of education ($r=0.367$; $p<0.01$), have a significant positive relationship with ownership and the economic value of the Yard. It means that the level of education can increase the husband's ability to manage and utilize the Yard, as seen from the ownership and economic value of the Yard. Husband's age ($r=0.317$; $p<0.01$) and family size ($r=0.337$; $p<0.01$) have a significant positive relationship with objective economic pressure. It means that the older the husband and the larger the family members, the more objective economic pressure can increase. Wife's length of education ($r=-0.274$; $p<0.01$) and per capita income ($r=-0.684$; $p<0.01$) were significantly negatively related to objective economic pressure. Economic pressure can decrease as the wife's education and per capita income increase.

Furthermore, objective economic pressure was significantly positively related to subjective economic pressure ($r=+0.623$; $p<0.01$). It means that the higher the objective economic pressure, the higher the perceived subjective economic pressure. Meanwhile, only per capita income ($r=-0.402$; $p<0.01$) was found to have a significant adverse effect on subjective economic pressure. It means that if family income increases, subjective economic pressure can decrease.

Table 3. Test of the relationship between family characteristics, ownership, and use of Yard with economic pressure

Variable	Ownership and use of the Yard	Objective Economic Pressure	Subjective Economic Pressure
Wife's age (years)	-0.134	0.090	0.002
Husband's age (years)	0.109	0.317**	0.102
Wife's length of education (years)	0.164	-0.274**	-0.236
Husband's length of education (years)	0.367**	-0.236	-0.150
Family size (people)	0.118	0.337**	0.157
Per capita income (rupiah)	-0.042	-0.684**	-0.402**
Homeownership	-0.158	-0.126	-0.128
Ownership and use of the Yard	1	0.180	0.076
Objective economic pressure	0.180	1	0.623**
Subjective economic pressure	0.076	0.623**	1

Notes: *significant at p<0.05; **significant at p<0.01

Discussion

Based on the research results of the family characteristics section, it is known that families with stunted children come from low-income families, and almost half experience moderate objective economic pressure and almost 10 percent high. According to Vaivada et al. (2020) and Pangaribuan et al. (2020), one of the causes of stunting children is the low socioeconomic status of the household. Households in the poor category are advised to increase family income, consume more highly nutritious food, and improve food quality by paying attention to the quantity and quality of the food itself (Arida et al., 2015). Apart from that, it is also known that families with stunted children are families where more than half of the parents' education is still low, and many of the fathers' jobs are laborers. According to the findings of Danso and Appiah (2023), the level of parental education and parental employment status are factors that cause stunting.

Still, in the family characteristics section plus the yard ownership section, it is known that only 1 in 10 families with stunting children have a yard, but not all families, such as farming families, own land and yards (Irfansyah & Rahmawati, 2021). Even though the size of the Yard varies, more than half of them already use it. Some use it to grow plants (vegetables, spices, and fruit) and raise livestock. It is also the same as the finding of Feriatin (2017) that families plant more seasonal crops because their land is small. The different types of plants planted are also by other research findings in different countries, such as in Kenya, Uganda, and Tanzania, people grow vegetables (Depenbusch et al., 2021); in Brazil, people grow medicinal plants (Caballero-Serrano et al., 2019); in Bangladesh, people grow vegetables and fruit in home gardens namely mango, banana, coconut, papaya, guava, and jackfruit (Ruba & Talucder, 2023); in South Africa, people plant woody plants which can be used for food, medicine, drinks and firewood (Ramashamba & Tshisikhawe, 2016); Ghana, households affected by HIV/AIDS had more annual plant species and planted more root crops (Akrofi et al., 2008).

Families with stunted children still experience economic pressure in the medium category. This objective economic pressure caused by the husband's irregular job and low income is also by (Sukmawati & Puspitawati's, 2021) findings that families experience economic pressure due to income being smaller than expenses. Precarious work makes the husband and wife experience economic pressure or financial constraints, and this

condition makes the husband and wife in the family unable to buy a house (De Lange et al., 2013).

Based on the results of interviews and observations regarding the use of yards by families who have stunting children, it is known that the use of these yards by families with stunting children has economic value, namely that it can meet daily needs and be sold so that the profits are used to meet daily needs. The growing family can meet their food needs by monitoring the Yard. Diwanti (2018) and Solihin et al. (2018) state that food needs can be met by using the home yard to improve community welfare and increase household needs efficiency. The home garden remains a significant source of healthy (nutritionally fulfilling) (Schreinemachers et al., 2020) and affordable and other health-promoting products (Guell et al., 2021; Ayuningtyas & Jatmika, 2019; Depenbusch et al., 2021; Marques et al., 2021; Ainamani et al., 2021; Chalmin-Pui et al., 2021); such as preserving medicinal plants (Caballero-Serrano et al., 2019). Home gardening provides food for humans and animals due to climate regulation and soil enrichment (Sahle et al., 2021). Home gardens also provide several ecosystem services such as habits for animals, recycling of nutrients, reduced soil erosion, and improved pollination. According to Asfaw and Zewudie (2021), a home garden system provides a better underground environment to increase the proliferation and activity of soil macrofauna. In this research, community gardens contribute to the food security of individuals, households, and communities (Corrigan, 2011). Recognition of the social, ecological, and health benefits of community gardens is higher than the economic benefits (Ding et al., 2022).

Higher education can increase a husband's ability to own and utilize a yard so that it has additional economic value. This means that husbands can encourage their wives to increase their wives' income, thereby increasing family income. Zhao (2015) said that strong evidence for the positive effect of a husband's education on his wife's earnings. This is because using the Yard for agriculture can increase family income. Karlsson et al. (2019) findings show that ownership of a yard or agricultural land shows a statistically significant protective relationship between underweight, wasting, anemia, and diarrhea in children.

Furthermore, as the husband's age increases and the number of family members increases, the objective economic pressure in the family increases. Some things are the same, and some are not with the findings of Laily and Sunarti (2022), namely that the number of children is positively related to objective economic pressure while increasing the husband's age is significantly negatively related to objective economic pressure. It means that the family requires high costs to meet family needs while the husband is increasingly unable to work. If the family does not have economic resources or is poor, this is undoubtedly related to objective economic pressure (Lee, 2022).

Meanwhile, the longer a wife stays in education and the higher her per capita income increases, the more the family's objective economic pressure can decrease. In contrast, the findings of Laily and Sunarti (2022) show no relationship between the wife's years of education and economic pressure. The number of family members is also related to the level of objective economic pressure felt by the family. The large number of family members will have an impact on the increasing demands of needs that must be met. According to Firdaus and Sunarti (2009), families with a small number of family members will have fewer dependents and expenses in meeting the needs of their family members, compared to families with larger family members. Subjective economic pressure can increase as objective economic pressure increases, while subjective

economic pressure will decrease with increasing per capita income. It is to the findings of Sims and Coley (2021) that family income appears as the most consistent predictor of depressive symptoms, which indicates subjective economic pressure. It is also in line with the findings of Laily and Sunarti (2022) that objective economic pressure is related to subjective well-being; namely, the higher the objective economic pressure, the lower the subjective well-being. Sutarto et al. (2023) findings show that the practice of using land for cultivation simultaneously affects reducing the incidence of stunting, and the motivation and experience of the head of the family in utilizing home yard land plays a role in the practice of utilizing yard land, resulting in productive land and adequate family food.

The limitation of this research is that the use of purposive location and respondent selection techniques means that the results cannot be generalized. Apart from that, the sample size in this study was still limited, and the respondents were only wives.

Conclusion and Recommendation

Conclusion

The majority of husbands and wives belong to the productive age group with a low level of education or equivalent to junior high school education. The majority of wives are housewives, and husbands work as laborers. Based on family size, the average respondent has four family members. Meanwhile, the average per capita family income is IDR 716,640.5 and is classified as a non-poor family. Classified as a non-poor family. In general, only a few families with stunted children have a yard. Even if someone has a yard, the Yard is small. With a yard that is not very large, not all families get income from using the Yard. Many families who have stunted children still experience economic pressure. Some of those who have yards plant crops, and some also raise livestock.

Furthermore, almost all family characteristics are related to objective economic pressure, including years of education, age, family size, and per capita income. In this study, it was found that the majority of families had low education, unstable work, and low income, which were characteristics of families with stunted children. More than half of families with stunted children have moderate objective and subjective economic pressure, and some still live in rented houses and share with extended families.

Recommendation

Based on the findings of this study, several recommendations for future research and interventions emerge. For researchers: longitudinal studies are needed to better elucidate the directional relationships between variables of interest over time. Larger, mixed-methods studies, including additional populations, could help validate the pathways suggested here. For practitioners and policymakers: livelihood programs should aim to enhance families' skills in optimally utilizing homestead areas for nutrition and income generation. Training initiatives could focus on sustainably intensifying homestead production and diversification as strategies to bolster household resilience. Multisectoral collaborations are warranted to jointly address underlying social, economic, and environmental determinants of childhood stunting. Pilot intervention projects testing integrated household-level approaches informed by local contexts can provide lessons for program scale-up. Policies supportive of smallholder agriculture and rural livelihood security should continue to be strengthened. Adopting a system perspective that considers

linkages between landscapes, livelihoods, and nutrition holds promise for designing more effective, culturally appropriate solutions to malnutrition in these communities.

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