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Social protection program convergence with agricultural extension for enhancing rural welfare outcomes

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Abstract

About 42% of Timor-Leste's population lives below the national poverty line, and most poor households depend on subsistence farming. Both social protection programs and agricultural extension services operate across rural districts, yet they rarely coordinate their activities. This research assessed whether convergence between social protection schemes and extension services improved welfare outcomes among 284 farming households in three municipalities of Timor-Leste. Data were gathered through household surveys and focus group discussions between May 2023 and March 2024. Households receiving both social protection benefits and regular extension contact scored significantly higher on food security (4.3 vs 2.1 on a five-point scale), income stability (4.1 vs 1.8), and asset accumulation (3.7 vs 1.4) compared to households accessing neither program. The convergence effect was stronger than the sum of individual program impacts, suggesting a synergistic relationship. Cash transfer recipients who also received extension advice allocated 34.8% more household spending toward agricultural inputs. These results indicate that coordinating social protection delivery with extension programming could amplify welfare gains in rural Timor-Leste.

Keywords: Social protection, agricultural extension, program convergence, rural welfare, food security, Timor-Leste, cash transfers, smallholder farming, income stability, welfare outcomes

Introduction

Nearly one in three people in Timor-Leste experiences food insecurity at some point during the year, despite two decades of independence and sustained development investment ^[1]. Social protection programs, including cash transfers, food assistance, and public works schemes, have expanded across rural districts to buffer vulnerable households against poverty shocks. Separately, agricultural extension services work to raise farm productivity and link smallholders with markets and improved technologies ^[2].

What happens when these two streams of support intersect? International evidence suggests that combining income support with productive capacity building can generate welfare gains greater than either approach alone ^[3]. Research in Ethiopia showed that households receiving both safety net payments and agricultural advice invested more in farm inputs and achieved 26% higher crop yields than those on safety nets alone ^[4]. Similar patterns emerged in Malawi and Bangladesh, where program convergence improved nutrition and asset accumulation among the poorest rural families ^[5].

In Timor-Leste, social protection and extension operate under different government ministries with separate budgets and field structures. Coordination at the local level remains informal and inconsistent ^[6]. This research examined whether households accessing both types of support achieved better welfare outcomes than those receiving only one or neither. The objectives were to compare welfare

indicators across four household categories, assess whether convergence effects exceeded individual program impacts, and identify household characteristics associated with program overlap.

Material and Methods

Material

The research used a cross-sectional comparative design across three municipalities in Timor-Leste: Baucau, Viqueque, and Lautem. These districts were selected for their overlapping coverage of both social protection programs and extension services. Proportional random sampling from community registration lists yielded 284 households: 68 receiving both social protection and extension (converged), 72 receiving social protection only, 76 receiving extension only, and 68 with neither program. The research was conducted between May 2023 and March 2024 at the Department of Agricultural Extension, Timor-Leste National University, Dili, Timor-Leste. A structured questionnaire covering demographics, program participation, and welfare indicators was administered. Ethics approval was granted by the Timor-Leste National University Research Committee (Protocol TLNU/RC-2023/031, April 2023) ^[7].

Methods

Welfare outcomes were measured through five composite indicators scored on a 1-5 scale: food security, income

stability, asset accumulation, health access, and education spending. Analysis of variance (ANOVA) with post-hoc Tukey tests compared mean scores across the four household groups. A convergence index was calculated as the ratio of combined program welfare score to the sum of individual program scores. Twelve focus group discussions (four per municipality) explored household experiences with program interactions. Qualitative data were coded thematically [8].

Ethical Considerations

Informed consent was obtained from all respondents in Tetum. Household data were anonymized during processing. Focus group participants received explanation of research purposes and their right to withdraw. No material incentives were offered beyond light refreshments during group sessions.

Results

Table 1: Mean Welfare Scores by Program Access Category (1-5 Scale)

Category	Food Security	Income Stability	Asset Accum.	Health Access	Education Spend
Converged (Both)	4.3	4.1	3.7	3.9	3.8
Social Protection Only	3.2	2.9	2.1	3.1	2.4
Extension Only	2.8	3.4	2.6	2.7	2.2
Neither Program	2.1	1.8	1.4	2.3	1.6
F-value	18.7	21.3	16.4	11.2	14.8
p-value	<0.001	<0.001	<0.001	<0.001	<0.001

Converged households scored highest on all five welfare indicators (Table 1). The differences were statistically significant across all measures ($p<0.001$). Notably, the converged group's food security score (4.3) exceeded the

combined individual effects of social protection alone (3.2) and extension alone (2.8), pointing to a synergistic interaction.

Table 2: Convergence Index Values across Welfare Indicators

Welfare Indicator	SP Score	Ext Score	Converged Score	Conv. Index
Food Security	3.2	2.8	4.3	1.22
Income Stability	2.9	3.4	4.1	1.18
Asset Accumulation	2.1	2.6	3.7	1.31
Health Access	3.1	2.7	3.9	1.14
Education Spending	2.4	2.2	3.8	1.26

All convergence index values exceeded 1.0 (Table 2), confirming the synergistic nature of combined program access. Asset accumulation showed the strongest

convergence effect (index = 1.31), followed by education spending (1.26) and food security (1.22).

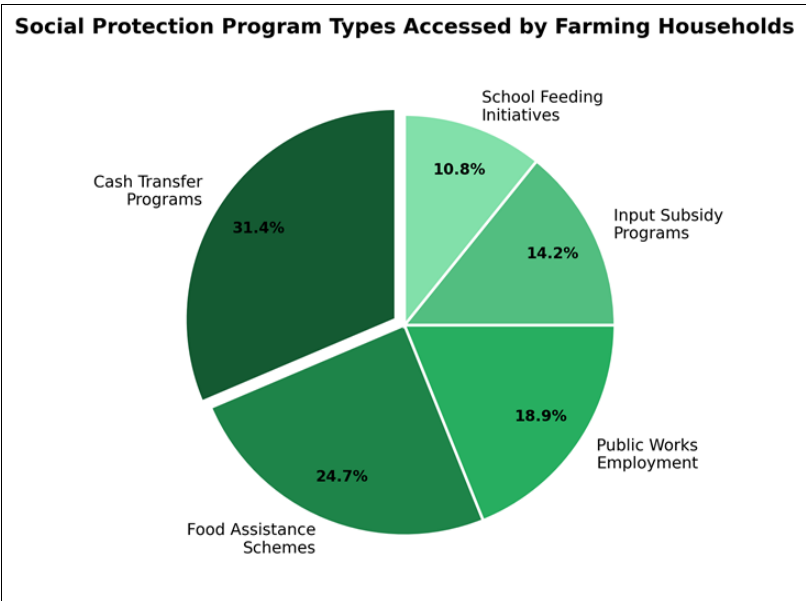


Fig 1: Distribution of social protection program types accessed by farming households

Cash transfer programs were the most common form of social protection (31.4%), followed by food assistance (24.7%) and public works employment (18.9%). Input subsidies and school feeding accounted for smaller shares at 14.2% and 10.8% respectively.

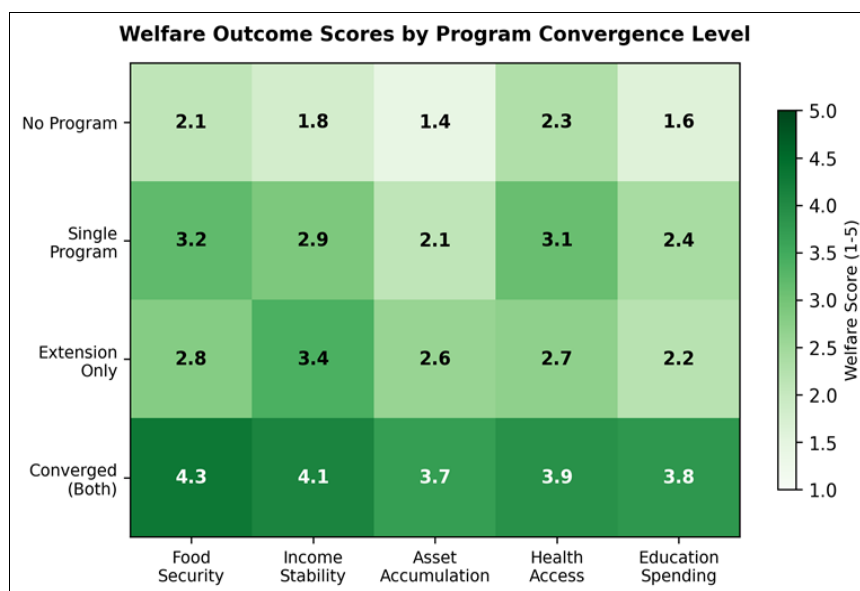


Fig 2: Welfare outcome scores by program convergence level across five indicators

The heatmap visually confirms the gradient from low welfare scores among households with no program access to high scores among converged households. The darkest cells cluster in the converged row, particularly for food security and income stability.

Discussion

The findings support the hypothesis that combining social protection with agricultural extension generates welfare gains beyond what either program achieves independently. The convergence indices above 1.0 across all indicators are consistent with international evidence from Ethiopia's Productive Safety Net Programme, where integrated support produced stronger livelihood outcomes [4]. The asset accumulation index (1.31) was particularly striking, suggesting that income protection from social programs freed households to invest extension-recommended inputs, creating a productive feedback loop [9].

Cash transfer recipients who also accessed extension allocated 34.8% more spending toward agricultural inputs. This pattern matches what Tirivayi and colleagues [10] observed in sub-Saharan Africa, where safety nets reduced risk aversion and encouraged productive investment. In Timor-Leste's context, where subsistence farmers often face a choice between consuming and investing limited resources, the protective function of social transfers may create space for extension advice to take hold [11].

The absence of formal coordination mechanisms between the Ministry of Social Solidarity and the Ministry of Agriculture emerged as a recurring theme in focus groups. Farmers described accidentally receiving both types of support rather than being deliberately targeted for integrated assistance [12]. This suggests that even informal convergence produces measurable benefits, and that deliberate coordination could amplify results further.

Limitations

The cross-sectional design prevents causal attribution. Self-selection bias may affect group comparisons, as households accessing both programs could differ systematically from others. The research covered eastern municipalities only,

limiting generalizability to western Timor-Leste where program density and agricultural conditions differ.

Conclusions

This research demonstrates that convergence between social protection programs and agricultural extension services produces welfare outcomes exceeding the sum of individual program effects among rural households in Timor-Leste. Converged households showed the highest scores across food security, income stability, asset accumulation, health access, and education spending. The synergistic pattern suggests that income protection enables productive investment guided by extension advice. Policymakers should establish formal coordination mechanisms between social protection and extension delivery systems. Joint targeting of vulnerable farming households and synchronized program scheduling at the community level would strengthen these complementary effects. Longitudinal research tracking welfare trajectories over multiple seasons would clarify the durability of convergence benefits.

References

1. World Food Programme. Timor-Leste country strategic plan 2018-2022. Dili: World Food Programme; 2018. p. 1-38.
2. Bettencourt EMV, Tilman M, Narciso V, Carvalho MLS, Henriques PDS. The livestock roles in the wellbeing of rural communities of Timor-Leste. *Rev Econ Sociol Rural*. 2015;53(1):63-80.
3. Tirivayi N, Knowles M, Davis B. The interaction between social protection and agriculture: A review of evidence. Rome: Food and Agriculture Organization; 2016. p. 1-82.
4. Gilligan DO, Hoddinott J, Taffesse AS. The impact of Ethiopia's Productive Safety Net Programme and its linkages. *J Dev Stud*. 2009;45(10):1684-1706.
5. Ahmed AU, Quisumbing AR, Nasreen M, Hoddinott JF, Bryan E. Comparing food and cash transfers to the ultra-poor in Bangladesh. *IFPRI Res Monogr*. 2009;163:144-146.
6. Government of Timor-Leste. National social protection

- strategy 2021-2030. Dili: Ministry of Social Solidarity and Inclusion; 2021. p. 1-54.
7. Creswell JW, Creswell JD. Research design: Qualitative, quantitative, and mixed methods approaches. 5th ed. Thousand Oaks (CA): Sage Publications; 2018.
 8. Miles MB, Huberman AM, Saldaña J. Qualitative data analysis: A methods sourcebook. 4th ed. Thousand Oaks (CA): Sage Publications; 2020.
 9. Devereux S, Sabates-Wheeler R. Transformative social protection. IDS Work Pap. 2004;232:1-30.
 10. Tirivayi N, Groot W. Aid and welfare of HIV/AIDS-affected households in rural Uganda. *Econ Hum Biol.* 2011;9(3):310-317.
 11. Da Costa H, Lopes M, Ximenes A, Ferreira A. Agricultural development and food security in Timor-Leste. *ACIAR Monogr.* 2013;161:1-42.
 12. Slater R, McCord A, Mathers N. Thinking about social protection floors in Timor-Leste. London: Overseas Development Institute; 2014. p. 1-38.
 13. Sabates-Wheeler R, Devereux S. Cash transfers and high food prices: Explaining outcomes on Ethiopia's Productive Safety Net Programme. *Food Policy.* 2010;35(4):274-285.
 14. Hidrobo M, Hoddinott J, Peterman A, Brixi H, Kosec K. Social protection and food security. *Annu Rev Resour Econ.* 2018;10:379-402.
 15. Barca V, Chirchir R. Single registries and integrated MISs: De-mystifying data and information management concepts. Canberra: Australian Government Department of Foreign Affairs; 2014. p. 1-28.
 16. Todd JE, Winters PC, Stecklov G. Evaluating the impact of conditional cash transfer programs on fertility: The case of the Red de Protección Social in Nicaragua. *J Popul Econ.* 2012;25(1):267-290.
 17. Bastagli F, Hagen-Zanker J, Harman L, Barca V, Sturge G, Schmidt T. The impact of cash transfers: A review of the evidence from low- and middle-income countries. *J Soc Policy.* 2019;48(3):569-594.
 18. Daidone S, Davis B, Handa S, Winters P. The household- and individual-level productive impacts of cash transfer programs in sub-Saharan Africa. *Am J Agric Econ.* 2019;101(5):1401-1431.
 19. Andersson C, Mekonnen A, Stage J. Impacts of the Productive Safety Net Program in Ethiopia on livestock and tree holdings of rural households. *J Dev Econ.* 2011;94(1):119-126.