

Table of Contents

Summary	2
Acknowledgments	4
Table of Contents	5
List of Tables	7
List of Figures.....	9
List of Abbreviations.....	10
1. Introduction	11
1.1. El Niño and its impact	11
1.2. Research questions and objectives of the study	15
2. Literature review.....	16
2.1 Household and intra – household definition.....	16
2.2 Intra – household allocation of resources.....	17
2.2.1 Intra house – hold food allocation.....	19
2.2.2. Intra – household time allocation and gender division of labour	21
2.3 Hypotheses derived from the literature review	25
3. Methodology	26
3.1 Measuring intra – household allocation of resources	26
3.1.1 Measuring intra – household food allocation	29
3.1.2 Measuring intra – household time allocation	30
3.2 Statistical procedure employed in the quantitative analysis.....	31
3.3 Analyzing intra – household relations.....	33
4. Research design and data collection	36
4.1 The research area and sampling procedure	36
4.2 Data collection and data processing	37
4.2.1 Data collection.....	37
4.2.2 Data processing	39
4.3 Definition of variables for the quantitative study.....	40
4.4 Definition of variables for the qualitative study.....	41
5. Results of the quantitative analysis.....	42
5.1 Introduction	42
5.2 Time Allocation analysis.....	46
5.2.1 Time allocation in rice production	46
5.2.2 Time allocation in temporary employment	48
5.2.3 Time allocation in maize production.....	51
5.2.4 Time allocation in cocoa production	54
5.2.5 Time allocation in other activities	56
5.3 Food allocation analysis	60
5.3.1 Food allocation in rice consumption	60
5.3.2 Food allocation in maize consumption.....	64
5.3.3 Food allocation in consumption of rice mixed with maize	65

5.3.4 Food allocation in cassava consumption	67
5.3.5 Food allocation in banana consumption	68
5.3.6 Food allocation in consumption of vegetables	70
5.3.7 Food allocation in fish consumption	71
5.3.8 Food allocation in chicken consumption.....	73
5.3.9 Food allocation in beef consumption	74
6. Results of the qualitative analysis	76
6.1 Interview analysis.....	76
6.2 Focus groups analysis.....	93
6.3 Key informants analysis	102
7. Discussion and conclusions.....	105
7.1 Discussion of time allocation and gender role analysis.....	105
7.1.1 Gender agricultural job opportunities and intra – household time allocation	105
7.1.2 Gender non-agricultural job opportunities and intra – household time allocation ...	106
7.1.3 Household member’s values and El Niño 2002	108
7.1.4 Age differentiation and intra – household time allocation	110
7. 1.5 Intra – household hierarchy	111
7.1.6 Intra – household effect of El Niño 2002 on wealth strata time allocation	112
7.1.7 Effect of El Niño 2002 on intra – household obligations and decisions	113
7.2 Discussion of food allocation analysis	116
7.2.1 Household members affected on food allocation	116
7.2.2 Effect of El Niño 2002 on wealth strata food allocation	119
7.2.3 Age differentiation and intra – household food allocation	120
7.2.4 Effect of El Niño 2002 on the share of the origin of the food consumed.....	121
7.3 Conclusions	122
7.3.1 Conclusions of the effect of El Niño 2002 on time allocation and gender role	122
7.3.2 Conclusions the effect of El Niño 2002 on food allocation	123
7.4 Limitations	124
7.4.1 Limitations of the time allocation and gender role analysis.....	124
7.4.2 Limitations of the food allocation analysis	124
7.5 Recommendations	125
7. References	126
Appendices	130
Appendix 1A Variables for the quantitative study food allocation.....	131
Appendix 1B Variables for the quantitative study time allocation	132
Appendix 2 Schedule of the research	133
Appendix 3 Measures used for food consumption	134
Appendix 4. Ijuk information.....	135
Appendix 5A Principal part of the questionnaire related to time Allocation	136
Appendix 5B Principal part of the questionnaire related with food allocation	137

List of Tables

Table 4.1 Research area sample size for the quantitative study	36
Table 4.2 Qualitative study details	37
Table 4.3 Variables for the quantitative study food allocation	40
Table 5.1 Average number of hours per household member per year by activity ..	45
Table 5.2 Average amount consumed per household member by food (quantity per month or per year)	46
Table 5.3 Average number of hours per year in rice production by gender.....	47
Table 5.4 Average number of hours per year in rice production by age group and gender.....	48
Table 5.5 Average number of hours in rice production per year by wealth stratum	48
Table 5.6 Average number of hours per year in temporary employment by gender and village	49
Table 5.7 Average number hours per year in temporary employment by age group and gender	50
Table 5.8 Average number of hours per year in temporary employment by wealth stratum.....	51
Table 5.9 Average number of hours per year in maize production by gender	51
Table 5.10 Average number of hours per year in maize production by gender and village	52
Table 5.11 Average number of hours per year in maize production by age group and gender	53
Table 5.12 Average number of hours in maize production per year by wealth stratum and gender	54
Table 5.13 Average number of hours per year in cocoa production per year by gender and village	55
Table 5.14 Average number of hours per year in cocoa production by age group and gender	56
Table 5.15 Average number of hours per year in cocoa production by wealth stratum	56
Table 5.16 Average number of hours per year in other activities sub group A by gender	58
Table 5.17 Average number of hours per year in other activities sub group B by gender	59
Table 5.18 Average number of hours per year in other activities sub group A by wealth stratum	60
Table 5.19 Average amount of rice consumed in plates per month by gender	61
Table 5.20 Average amount of rice consumed in plates per month by age group and gender	62
Table 5.21 Average amount of rice in plates consumed per month by wealth stratum	62

Table 5.22 Percentage share of the origin of rice consumed per year by village	63
Table 5.23 Average amount of maize in cobs consumed per year by gender and village.....	64
Table 5.24 Average amount of maize in cobs consumed per year by wealth stratum	64
Table 5.25 Average amount of rice mixed with maize in plates consumed per month by gender and village	66
Table 5.26 Average amount of rice mixed with maize in plates consumed per month by wealth stratum.....	66
Table 5.27 Average amount of cassava in pieces consumed per month by gender	67
Table 5.28 Average amount of cassava in pieces consumed per month by wealth stratum.....	68
Table 5.29 Average amount of banana in fruits consumed per month by gender and village.....	69
Table 5.30 Average amount of banana in fruits consumed per month by wealth stratum.....	69
Table 5.31 Average amount of vegetables in cups consumed per month by gender and village	70
Table 5.32 Average amount of fish in portions consumed per month by gender and village.....	71
Table 5.33 Average amount of fish in portions consumed per month by age group and gender	72
Table 5.34 Average amount of fish in portions consumed per month by wealth stratum.....	72
Table 5.35 Average amount of chicken in portions consumed per year by gender	73
Table 5.36 Average amount of chicken in portions consumed per year by wealth stratum.....	73
Table 5.37 Average amount of beef in portions consumed per year by gender	74
Table 6.1 Percentage of answers of the level assigned by the communal leaders to some values in the community	104

List of Figures

Figure 1.1 Areas affected by El Niño 1982 – 1983	11
Figure 1.2 Oceanic Nino Index	12
Figure 1.3 Project region	14
Figure 3.1 Intra – household dynamics and household members’ relationships.....	28
Figure 4.1 Research schema.....	38
Figure 5.1 Detailed and final groups of age in years for the population in the year 2004 (% of household members).....	43
Figure 5.2 Percentage share of the wealth strata within the villages.....	44
Figure 5.3 Number of household members by other activity	57
Figure 5.4 Percentaje share of the origin of rice consumed per month	63
Figure 5.5 Percentage share of the origin of maize consumed per year	65
Figure 5.6 Percentage share of the origin of rice mixed with maize consumed per year.....	67
Figure 5.7 Percentage share of the origin of cassava consumed per month	68
Figure 5.8 Percentage share of the origin of banana consumed per month.....	70
Figure 5.9 Percentage share of the origin of vegetables consumed per month	71
Figure 5.10 Percentaje share of the origin of fish consumed per month	73
Figure 5.11 Percentaje share of the origin of chicken consumed per year	74
Figure 5.12 Percentaje share of the origin of beef consumed per year	75
Figure 6.1 Explanation of the first code derived from the in – depth interviews	78
Figure 6.2 Explanation of the second code derived from the in – depth interviews	81
Figure 6.3 Explanation of the third code derived from the in – depth interviews...	83
Figure 6.4 Explanation of the fourth code derived from the in – depth interviews.	86
Figure 6.5 Explanation of the fifth (A) code derived from the in – depth interviews	89
Figure 6.6 Explanation of the fifth code (B) derived from the in – depth interviews	93
Figure 6.7 Explanation of the first series of codes derived from the focus groups .	97
Figure 6.8 Explanation of the second series of codes derived from the focus groups	101

List of Abbreviations

ANOVA: Analysis of Variance

ENSO: El Niño – Southern Oscillation

IMPENSO: Interdisciplinary research project “Impact of El Niño – Southern Oscillation”

m.a.s.l: Elevation above the see level

NOAA: National Oceanic and Atmospheric Administration

ONI: Oceanic Niño Index

SPSS: Statistical Programme for the Social Sciences

SST: Sea Surface Temperature

STORMA: Collaborative Research Centre ‘Stability of Rain Forest Margins”, SFB 552

USA: United States of America