



Hans H. Ruthenberg-Graduierten-Förderpreis 2015/

Hans H. Ruthenberg Award for Graduates 2015

Dominic Meise “Food Security in Stung Treng, Cambodia – An Empirical Assessment”

Leibniz University Hanover, 2014

Supervisor: Prof. Dr. U. Grote

Summary

Even though the Kingdom of Cambodia is still suffering from the aftermaths of decades of civil war and the Vietnamese occupation, it has achieved significant progresses in reducing poverty since the 1990s. Considering this, the World Bank's 2013 poverty assessment of Cambodia titled “Where Have All The Poor Gone?” (World Bank 2014). However, at the same time the report points out that progress in combating malnutrition “was limited, stalled, or even reversed” in recent years, with the reasons not being fully fathomed.

Especially the rural areas, which comprise the larger part of the country’s population, lag behind in terms of food and nutrition security. According to a food security and vulnerability analysis of the World Food Programme (WFP) in 2008, 90 percent of the estimated 1.7 million food-insecure Cambodians lived in rural areas (WFP 2008).

However, analyses of food security in Cambodia are rare in comparison to most other South and Southeast Asian countries and the existing studies mainly consist of descriptive overviews, which lack in identifying the causes and drivers of food insecurity and therefore are useful for formulating policy responses only to a limited extent.

Hence, this thesis was set out (1) to investigate the situation of food security as well as (2) the causes and determinants of appropriate access to food in Stung Treng, one of Cambodia’s poorest and most remote provinces.

The study contributes to research on food security in several aspects: the data used for the analyses has been collected recently, while the last comprehensive food security analysis of Cambodia has been conducted years ago. Furthermore, instead of relying on only one indicator of food security, the present study applies a range of indicators for the different dimensions of the concept. In this respect, the study contributes to the ongoing discussion of how the different measures of food security can be combined in order to capture more facets of this multidimensional concept. In addition, the findings of the analyses may contribute to effective policy design that targets the people most in need.

Data was collected through April and May 2013 for a total of 600 rural households, mainly involved in agriculture and natural resource extraction such as collecting, fishing (in the

Mekong and its tributaries) and hunting. Other income earning opportunities are scarce as for example credit is not available for most households.

Food security is often described as an elusive concept, as it is constantly evolving and very difficult to assess its multidimensional nature. Although most researchers agree that food security is best described by a range of measures, the question on what indices should be combined for food security assessments remains unresolved and indicators are often treated as interchangeably or their use is predetermined by institutional context (Maxwell et al. 2014; Coates 2013).

Therefore the first research objective was addressed by applying a range of indicators for the three different dimensions of the concept that are measured at the household level (access, utilization and stability) depicted in table 1.

It was shown that by relying on a single measure at one point in time, one is hardly able to depict the very complex situation of food security within a region, which can in turn lead to no or misguided policy responses.

Table 1: Indicators used to assess food security in Stung Treng

Food Security Dimension	Indicator
Food access in terms of nutrient adequacy (quality)	Household Dietary Diversity Score Food Consumption Score
Food access in terms of food sufficiency (quantity)	Food Consumption Score
Food utilization	Child anthropometrics for children < 5y.
Food security stability	Self-assessed measures

With respect to the World Food Programme's Food Consumption Score (FCS) it was established, that food insecurity in terms of food access was relatively low and has improved when compared to findings of a study by the World Food Programme from 2008; only very few households (1.7 %) are classified as having a poor food consumption and around 17 % of households belong to the group of borderline food insecure households. However, on closer consideration of the composition of the FCS as well as the Household Dietary Diversity Score (HDDS) the findings showed that the overall dietary diversity is rather low and that the high FCS is mostly attributable to the high consumption of fish. At the same time, other important food groups such as pulses, fruit or dairy-products are often missing in the diets of households in Stung Treng.

To measure food utilization three anthropometric indicators revealed that an alarming proportion of children below the age of five is suffering from undernutrition as 55 % of children are stunted (too small for their age), 37 % are underweight (too light for their age) and 22 % are wasted (to light for their height). In comparison to the Demographic and Health Survey from 2010 there was not visible improvement with respect to these indices. Therefore, these findings are contradictory to the on average quite high FCS of the population.

By applying several self-assessed measures for the stability dimension food security, it was established that a pattern of seasonal food insecurity for many households is likely, as the data and literature suggest that both rice and fish might become scarce during the rainy season and the data for this thesis were actually collected during the peak of the fishing season. In this

respect a sensitivity analysis has shown that one (two) day(s) of less fish consumption per week would increase the proportion of the food insecure from around 18 % to more than 25 % (35 %). These findings show that a relatively large proportion of households are vulnerable to become food insecure during the lean season.

The rationale from these findings is that quantifications of the number of food insecure have to be viewed with caution and that they are strongly influenced by the choice of indicators as well as the timing of food security assessments. A comprehensive overview of a population's situation regarding food security can only be achieved by applying a range of indicators several times per year to account for the different facets of the concept and variations over time as most food insecurity is seasonal. However, this is hardly ever done due to time, money and other feasibility constraints.

Concerning the second research question, namely to identify the causes of drivers of insufficient access to food, bivariate analysis as well as an Ordinary Least Squares (OLS) regression with the FCS as regressand was applied. Regressors were chosen based on a comprehensive literature review and a Sustainable Livelihoods framework, which emphasises the highly diversified portfolio of activities rural people rely on to earn their livelihoods. Confirming the assumptions of the SL framework, the results depicted the high diversity of livelihood assets and strategies rural households draw on to sustain their livelihoods and food security. The findings revealed that food security is positively related to household size, education of the household head, membership in a political party, market- and credit access, crop diversification as well as engagement in small businesses and fishing, while engagement in hunting and agricultural wage labour was found to be negatively associated with food security.

Several conclusions can be drawn from the descriptive and regression results. Amongst the severe problem of child-malnutrition, the lack of decent employment and infrastructure, the strong reliance of Stung Treng's people on livelihood strategies directly linked to the natural resource base for example deserves strong attention of policy makers. As virtually every household in the sample reported a fast deterioration of natural resources such as forest area, wild animals and fish stocks and most of these activities are not controlled by any authority, this clearly hints at a problem in resource management and therefore sustainability. Hence, it is necessary to find solutions for a sustainable use of the natural resource base without impairing the ability of the poor to earn their livelihood.

A particular strong concern in this respect emerges when the high importance of fish consumption for rural Cambodian people is considered. Due to the Mekong's high potential for generating hydropower, many dams are either already constructed or planned, which will impact the ecosystem of the river largely (Ziv et al. 2012), which will have severe implications for food security in the region.

References

Coates, J. 2013: Build it back better: Deconstructing food security for improved measurement and action. In: *Global Food Security 2* (2013) pp. 188-194

Maxwell, D., Vaitla, B., Coates, J. 2014: How do indicators of household food insecurity measure up? An empirical comparison from Ethiopia. In: *Food Policy 47* (2014) pp. 107-116.

WFP 2008: Kingdom of Cambodia: Comprehensive Food Security and Vulnerability Analysis. World Food Programme, Rome.

World BM 2014: Where Have All The Poor Gone? Cambodia Poverty Assessment 2013.
World Bank, Washington D.C.

Ziv, G., Baran, E., Nam, S., Rodriguez-Iturbe, I., Levin, S. 2012: Trading-off fish biodiversity, food security, and hydropower in the Mekong River Basin. In: Proceedings of the Natural Academy of Sciences (PNAS) of the United States of America vol. 109 no. 15, pp. 5609-5614.