



# The Role of Landholding as a Determinant of Food and Nutrition Insecurity in Rural Myanmar

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**Summary.** — Recent research has emphasized the role of land tenure in influencing rural food and nutrition insecurity in developing countries. We use data from rural Myanmar to empirically analyze the links between land holdings and household level food and nutrition security. Our analysis focuses on the following issues: (i) what are the socio-economic characteristics of food insecure households?, (ii) what are the main coping strategies adopted by vulnerable households to address their food security?, and (iii) are our findings robust across the different food security measures? Our results show landholding to be a strong predictor of household food and nutrition security.

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**Key words** — Myanmar, food and nutrition security, land tenure

## 1. INTRODUCTION

The international research community has an extremely limited understanding of the dimensions and background contexts of food insecurity in rural Myanmar. Myanmar is one of the few countries not included in the FAO's flagship publication *The State of Food Insecurity*; a status it shares with only a few other (generally war-torn) countries, including Afghanistan, Iraq, Somalia, Western Sahara, and the Democratic Republic of the Congo. The sketchy evidence which exists on food insecurity in Myanmar paints a picture of relatively abundant agricultural production co-existing to a large extent with rural poverty and under-nourishment.<sup>1</sup> The Food and Agriculture Organization (FAO) defines food and nutrition security (FNS) as a population's "physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2008). The most recent FAO national assessment suggests that at least 20% of the Myanmar population is undernourished (FAO Representation in Myanmar, 2011). As the country opens to the world, there is intensified relevance to the question of how food insecurity connects to Myanmar households' livelihoods.

The aim of this paper is to empirically investigate household-level food and nutrition security (FNS) in rural Myanmar, focusing on the role of land ownership. The data for our analysis come from the 2011–2012 *Livelihoods and Food Security Trust Fund (LIFT, 2012)* dataset which includes a sample of 4,000 households. We are interested in the extent of unmet food needs within Myanmar's rural population, and the food security circumstances of those households most in need. There are four key dimensions to food security: availability, access, utilization, and stability. Our focus in this paper is on the 'access aspect' of the food security definition, which requires population groups to have the purchasing power to procure the quantity and quality of food that their household requires.

Myanmar is a particularly appropriate context to study the nexus between poverty-land ownership and FNS, given its status as a mainly agrarian country that is simultaneously a net food exporter but with severe problems of rural poverty and

malnutrition. Approximately 32.5 million of Myanmar's 48.3 million people live in rural areas, which accounts for 87% of the country's poor (United Nations Development Program, 2011a, p. 7). Nevertheless, Myanmar continues to be a net exporter of rice and pulses, with approximately 800,000 tonnes of rice (milled equivalent) (Wong & Wai, 2013) and 630,000 tonnes of pulses (FAO, 2014) exported annually during recent years. The mismatch in Myanmar's status as a major exporter of food staples, but with high levels of under nutrition raises important analytical issues for investigation of food security.

An extensive body of international research addresses, or at least touches on, the ways that FNS intersects with issues relating to land tenure. At a fundamental level, a fairly simple and direct relationship exists between land tenure and FNS in rural areas of developing countries. For rural households, income generation and diversification of livelihoods to a large extent depends on the assets that are available to them (Foster, Valdes, Davis, & Anriquez, 2011). Land is often the most important physical productive asset available to rural households, and returns to land account for a substantial proportion of household income. Land ownership allows households to generate income to fund both current consumption and investment activities, smooth consumption inter-temporally (since land can be used as collateral to access financial credit markets), and insure against idiosyncratic shocks due to ill health and adverse weather conditions. Furthermore, access to land and security of tenure is often the key to having control over major decisions such as what crops to grow, what techniques to use, and the decision as to what to consume and what to sell. Empirical evidence from a large number of countries such as Chile (Berdegue, Ramirez, Reardon, & Escobar, 2001), Ecuador (Elbers & Lanjouw, 2001), China (De Janvry, Sadoulet, & Zhu, 2005), and India (Lanjouw & Shariff, 2002) find a positive association between land size and agricultural income, and a negative relationship between land size and non-agricultural employment and income.

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Landless or near-landless households, on the other hand, may be unable to use land to generate income or to cushion themselves against major shocks through asset sales. Previous research (see Carter & Barrett, 2006; Zimmerman & Carter, 2003) has shown that initial asset inequalities may lead to situations where asset-poor households find themselves pushed into poverty traps, which may deepen over time. Indeed, recent studies from Myanmar have pointed to high levels of land inequality and landlessness in the rural sector (Byerlee, Kyaw, Thein, & Kham, 2014). Estimates of landlessness in Myanmar range between 24% and 55% of all rural households (see MSU/MDRI, 2013; Okamoto, 2008; UNDP, 2011a). In Myanmar, the skewed nature of land distribution and ownership of assets has led to high levels of rural inequality and high rates of poverty (MSU/MDRI, 2013). Woods (2013) attributes some of this skewed land distribution to the Myanmar government's policy of allocating land blocks to local agribusiness investors and companies, many with links to the military. These land-allocations are estimated to account for 6–8% of total agricultural land holdings.

Poverty is intrinsically linked to food security, through an inability to access adequate nutrition, particularly, for vulnerable rural households. As Lipton (1985) points out, landlessness in itself is unlikely to be associated with poverty if land is not a scarce commodity. However, in rural settings where land is both scarce and allocated according to economic or political power, landholdings below a certain level may be associated with rural poverty. This link between landlessness and poverty is particularly pertinent if there are limited employment opportunities outside agriculture. Thus, land rights (as a key productive asset) may be a critical factor in enabling rural households to balance their capabilities and assets, and determine their resulting strategies to cope with their daily production and food security. Escaping poverty requires among other factors a combination of both increasing the quantity of assets as well as increasing the returns to those assets (Baulch, 2011).

However, beyond this obvious starting point, two important nuances exist in the relationships between food, nutrition, and land. Firstly, agricultural holdings do not always insure households from food insecurity as average farm sizes have been declining steadily across many developing countries (Eastwood, Lipton, & Newell, 2010), and in many cases are below the minimum thresholds for household provisioning (De Janvry & Sadoulet, 2012). These households may need to diversify their collective sources of livelihood into the non-farm sector if they are to make ends meet. Substitution away from own production toward other livelihood activities was found to have a negative effect on households' own agricultural output in Mexico (Pfeiffer, Lopez-Feldman, & Taylor, 2009), and in China (Huang, Wub, & Rozelle, 2009, p. 203). Alternatively, the nutritional effects of non-farm livelihood diversification may be positive if this displacement generates enhanced cash incomes that are devoted to increased food purchases, (Babatunde & Qaim, 2010).

Second, the diversity of livelihoods among rural households indicates a range of responses to food insecurity. However, a household's ability to cope with and withstand adverse economic shocks depends on its capabilities to utilize and adapt its assets (inclusive of the 'five capitals' of physical, human, financial, social, and natural capital) to altered circumstances. Evidence from a wide range of developing countries emphasizes the diversity and spatial/ temporal complexity of adaptive behaviors and coping strategies (Barrett, Reardon, & Webb, 2001; Bryceson, 1999; Chambers & Conway, 1992; Niehof, 2004; Scoones, 2009). For many rural households, agriculture is no longer the main activity of the poor (Haggblade,

Hazell, & Reardon, 2007; Rigg, 2006), and this shift in thinking has questioned the traditional land-focused view of rural households. Winters, Davis, and Carletto (2009) study based on household data from 15 countries, finds that households with high levels of human capital shift to off-farm activities.

It is still the case that in countries with unequal land access, the non-poor have a greater share of agricultural income. This may lead the poorly educated and landless households to be involved in low-return farm wage employment (Anriquez and Valdes, 2006; Foster *et al.*, 2011). This appears to be the case in Myanmar, where the MSU/MDRI's (2013) estimates for USAID/Burma, show that seasonal casual labor on land-owner's farms is the main source of income for approximately half the landless and near-landless households in rural areas.

Summing up, the broad consensus of international research is that land holding is crucially important in shaping FNS outcomes, although this is strongly mediated by the quality, temporality and location of any non-farm livelihood decisions and the ways in which landholdings are used. Our analysis seeks to address the knowledge gaps about the role of land holdings (as a key productive asset) to influence household level FNS in rural Myanmar; and the capacities of households to address food insecurity through adaptive behaviors and coping strategies.

A key contribution of our paper is that we are able to quantify the extent of food insecurity in our study sample in rural Myanmar using two alternative measures of food security- the respondent's self-reported responses on their perception about their household's food security status; and a measure of 'dietary diversity' – which indicates the number of unique food groups consumed by a household.

In the next section, we provide the background context of Myanmar followed by Section 3 where we discuss the dataset and methodology used in the analysis. In Section 4, we present the main results of the econometric analysis of the data, and Section 5 discusses the conclusions of the analysis.

## 2. BACKGROUND

Myanmar is one of the poorest countries of the world, and its Human Development Index is ranked 149th out of 187 countries in the United Nations Development Program (UNDP, 2011a). It is rich in natural resources (minerals, natural gas, and timber) and has a sizeable agricultural sector (contributing 42% to GDP) with considerable potential for further growth. As Myanmar transitions out of political and economic isolation, there is a critical need to understand the FNS circumstances of its population.

The mainstay of Myanmar's agriculture is rice, which dominates the Central plains and Delta region, and is generally grown in rotation with pulses. During the period of British rule, Myanmar became a large rice producer, and during subsequent years this status slipped because of a slow uptake of the high-yield varieties (Kyi, 1982), and coercive land-use laws that inhibited farmer innovation (Kurosaki, 2008; Thawngmung, 2004).

The centrality of rice cultivation within Myanmar's rural economy was politically inscribed during the military rule, which commenced with the 1962. The combination of national impoverishment and military rule created the preconditions for the national focus on rice, with the government viewing a "stable supply of rice [as] a prerequisite for political stability" (Kurosaki, 2008, p. 182), and with few foreign exchange reserves, this needed to be supplied domestically. Rice accounts for a substantial proportion of the calorie intake of an average

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