Forestland and rural household livelihoods in the North Central Provinces, Vietnam

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ABSTRACT

This paper examines the effects of forestland on household income, poverty and inequality among households in Vietnam's poorest rural districts, the North Central Provinces. Randomly selected on the basis of their access to forest resources, 3200 households were interviewed. These people are extremely poor, with 54% living below the poverty line. Forest income constitutes about 17% of their total income; only wage income (37%) ranks higher. Such income is comprised mainly of non-timber forest plants (77%), followed by timber products (18%). However, there is a large gap in forest income between the poor and non-poor. The amount of forest income derived by non-poor households was nearly six times as much as that earned by poor households. Our micro-econometric analysis indicates that gaining access to more forestland would increase household per capita income and reduce the incidence and intensity of poverty, even after controlling for all other variables in the model. In addition, we find that forest income was the second largest contributor to overall income inequality and had a large marginal effect on it among local households. A policy implication here is that increasing the access of the poor to forest resources and improving their efficiency in forest management could have a substantial effect on income, poverty and inequality in the study area.

1. Introduction

The role of forest resources in rural household livelihoods in developing countries has received increasing attention from scientific communities and policy makers (Angelsen et al., 2014; Das, 2010; Hogarth et al., 2013; Kar and Jacobson, 2012; Rahut et al., 2016). While the Agricultural Revolution occurred more than 10,000 years ago, millions of rural households in developing societies have earned as much income from forest resources as from cultivating crops (Wunder et al., 2014). Forests offer a variety of products and services to local households dwelling in and around them and are a main source of livelihood for millions of people around the world (Behera, 2009). A number of recent studies on the importance of forest resources to household livelihoods reveal that forests have a substantial potential for improving income and reducing both poverty and inequality among forest-dependent people (Das, 2010; Rahut et al., 2016).

Vietnam has a total mainland area of about 331,600 km², including mountains and tropical forests, as well as more densely populated plains in both the north and south of the country (PricewaterhouseCoopers [PWC], 2016). Mountains and hills cover

about three-quarters of Vietnam's total area, whereas only 15% is made up of farmland (De Jong and Van Hung, 2006). The midland and upland areas of Vietnam contain the bulk of the country's forest resources (Vietnamembassy-usa, 2017). Over the past two decades, the Vietnamese government has implemented several reforestation and development programs that have targeted upland regions of the country. Several programs, such as Programs 134, 135, 327 and 336, have aimed at allocating forest land use and replanting, developing local markets and infrastructure, and delivering housing, health and education services, with the dual objectives of protecting forest resources and raising the living standards of ethnic minority households and those living in remote or mountainous areas (Thulstrup, 2015).

It was estimated that about 25 million forest-dependent poor and ethnic minority groups use forests for subsistence livelihoods in Vietnam (WB, 2016). A number of studies have investigated the importance of forests to rural households in Vietnam (McElwee, 2008; Muller et al., 2006; Sunderlin and Huynh, 2005; Thulstrup, 2015; To et al., 2012). However, to the best of our knowledge, limited econometric evidence exists on the effect of forest resources on household income, poverty reduction and inequality among ethnic minorities and

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the poor in remote and mountainous areas in Vietnam. A better understanding of the contribution of forest resources to local household livelihoods is of great importance when adjusting and designing policy interventions to meet people's needs and improve their economic welfare. The current study was conducted to fill this gap.

Our study is the first to investigate the role of productive forestland (hereafter called "forestland") on income, poverty and inequality among rural households in the Northern Central Coastal Region – one of the poorest regions of Vietnam. The study has three main objectives: (i) to quantify the effect of forestland on household income; (ii) to measure the role of forestland on the incidence and intensity of poverty at the household level; and (iii) to estimate the influence of forest income on overall income inequality among households.

Two main findings are: *first*, access to more forestland would increase household per capita income, reduce the likelihood of a household falling into poverty and mitigate its poverty gap, even after controlling for all other factors in the models; *second*, forest income was the second largest contributor to overall inequality and had a large incremental effect on it. The findings differ from those in previous studies of Vietnam's Northwest Mountains. These studies alleged that forestland has no connection with household income or poverty eradication (Tran et al., 2015), that forest income is the smallest factor in total income inequality, and does have an equalizing effect on it (Tran, 2016).

2. Background of the study

Following the economic and political reforms known as "Đổi Mới" launched in 1986, Vietnam's forestry sector has transitioned from forestry controlled by central planning to people-oriented forestry. Policies for land and forest have been continually revised and adjusted, as can be seen in several laws (e.g. Land Law 1993, revised in 1998 and 2003; Law on Forest Protection and Development 1991, revised in 2004) and other regulations such as Decree 02/CP, Decree 01/CP, Decree 163/1999/ND-CP, etc.) (Nguyen, 2009). This process removed subsidies previously given to state forest enterprises (SFEs) and closed down numerous unproductive and inefficient SFEs (To et al., 2012). The Vietnamese government allocated land and forest to individuals, households, communities and other entities. At the same time, the government implemented reforestation programs, such as 327/CT and the 5 Million Hectare Reforestation Program (Program 661), with the dual objectives of increasing forest coverage and contributing to hunger elimination and poverty alleviation (Nguyen, 2009; Thulstrup, 2015). This has resulted in changes in the livelihoods of local people by giving them access to living resources.

According to the National Assembly's 2004 Law on Protection and Development of the Forest (**Forest Law 2004**) (WB, 2011), forestland can be categorised according to three main functions, namely special-use, protection and production. Special-use forests (SUF) are used mainly for the conservation of nature, protection of historical and cultural relics, in service of recreation and tourism in combination with protection, and contributing to environmental protection. Protection forests are reserved for the protection of water streams and soils, to prevent soil erosion and desertification, and to mitigate natural calamities and regulate climate. Production forests have the main purpose of the production and export of timber and non-timber forest products, in combination with protection. Production forests are planted on production forest land (The National Assembly, 2004). Of the three types of forest, the production forest area remains the largest, covering about 6 million hectares (ha) of the country, followed by protection forests, consisting of 5 million ha, then special-use forests with almost 2 million ha (WB, 2011).

The current study focuses on the Northern Central Coastal Region (or the North Central region), which is one of key economic regions in Vietnam. It is adjacent to Red River Delta in the north, People's Democratic Republic of Laos in the west, South Central Coast in the south, and South China Sea in the east. The region is home to 25

different ethnic minority groups (Thai, Muong, Tay, H'mong, Bru-Van Kieu) residing in the Truong Son mountain range while Kinh people mainly live in the eastern coastal plain (Alotrip, 2014). The region ranked seventh among the eight regions in income per capita in 2014 (GSO, 2015). The North Central region has a tropical monsoonal climate, with a land area of about 5.15 million ha (16% of Vietnam's total land area), of which 80% comprises hills and mountains while the remainder is made up of coastal plains with agricultural land (Ministry of Agriculture and Rural Development [MARD], 2016). The region is administered in six provinces, namely Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri and Thua Thien Hue, with a population of about 10.3 million people (12% of the total population of Vietnam) living in 1820 communes (MARD, 2016). The forest coverage is 44% in the region and 1.7 million ha of the region's forestland are administered by the state, while about 0.9 million ha have been allocated to households or village communities. Natural forests cover 2.1 million ha, making up 41% of the total area, and most of this is evergreen broadleaf forest (EBF). The major portion of natural forest is poor EBF (1.3 million ha), followed by EBF of medium quality (452,900 ha), then rich EBF, accounting for only 226,626 ha (4%). Other forestland consists of 138,755 ha, while timber plantations cover 637,651 ha, making up 12% of the area (MARD, 2016).

It should be noted that private ownership of any type of land is not permitted in Vietnam and all types of land under the ownership of the whole people with the State as the administrator. However, the laws of Vietnam allow the land-use rights (LURs) (The National Assembly, 2013). Land-use right certificates (LURCs) (the red books) are allocated to organizations, communities, households or individuals, which can be exchanged, transferred, leased, inherited or mortgaged (The National Assembly, 2013). The available data show that by 2011, about 12,1 million ha of forestry land were allocated to different groups and the forestland area allocated to households and individuals accounted for the highest proportion (37%; 4,5 million ha). About 70% of the forestland allocated to households and individuals is production forest land while the remainder (about 30%) is protection forest land (Phuc and Nghi, 2014). Although issuing LURCs is a top national priority for natural resource and environmental agencies, progress has been remarkably slow (MDRI, 2016). The North Central region is one the three ecological regions having the lowest proportion of LURCs allocated (about 76% of land area) (Phuc and Nghi, 2014). It is estimated that by 2015 in the study area, about 66.6% of forestland had LURCs and 61.9% of forestland parcels had LURCs (MDRI, 2016).

3. Data and method

3.1. Data

The dataset from the Quantitative Socio-Economic Survey for Emission Reduction-Program (ER-P) Provinces Areas [QSESERPA] was used for the current study. The QSESERPA was conducted by the Mekong Development Research Institute [MDRI] in 2016 (MDRI, 2016). The main objective of the project was to collect information on the socio-economic profile of the communities in the proposed ER-P program, including details concerning vulnerable groups and forest-dependent households and communities (especially ethnic minorities). This information is a vital prerequisite and key input for designing the project (MDRI, 2016). The survey was conducted in six provinces in the Northern Central Coastal Region, namely Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri and Thua Thien Hue, where the richest natural forests are located (MDRI, 2016).

The sampling frame for the survey contains 327 communes in six provinces. The 327 selected communes met the following criteria: (i) the number of ethnic minority households is greater than 100 and the number of households in poverty or close to it is larger than 100; (ii) the deforestation and degradation area is larger than 200 ha; the afforestation or reforestation and regeneration area is larger than 200 ha;