บทบาทของปศุสัตว์ในการเปลี่ยนแปลงการดำรงชีพบนพื้นที่สูงในภาคเหนือของสาธารณรัฐประชาธิปไตยประชาชนลาว: การส่งเสริมการเรียนรู้ของเกษตรกรตามลักษณะของกลุ่มชาติพันธุ์และเพศ

The Role of Livestock in Changing Upland Livelihoods in Northern Lao PDR: Facilitating Farmer Learning According to Ethnicity and Gender

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บทคัดย่อ

การผลิตปศุสัตว์ในสาธารณรัฐประชาธิปไตยประชาชนลาวกำลังมีบทบาทสำคัญมากขึ้นในการประกันรายได้ของครัวเรือนในชนบท การประหยัดแรงงาน และการปรับปรุงการดำรงชีพในพื้นที่สูงในภาคเหนือ ระบบแบบดั้งเดิมซึ่งมีการลงทุนต่ำ โดยโค กระบือ แพะ สุกร และไก่ที่ถูกเลี้ยงแบบปล่อยให้หากินเอง โดยไม่มีค่าใช้จ่าย ถูกแทนที่ด้วยวิธีการจัดการดูแลอย่างใกล้ชิด บทความนี้อธิบายถึงการวิจัยเชิงปฏิบัติการในสามจังหวัดในภาคเหนือเพื่อปรับปรุงและปรับเปลี่ยนการดำเนินการด้านปศุสัตว์ของเกษตรกร**ที่มาจากกลุ่มชาติพันธุ์ เพศ และสภาพ**แวดล้อมที่ต่างกัน เจ้าหน้าที่ปศุสัตว์อำเภอทำงานร่วมกับเกษตรกรจากกลุ่มชาติพันธุ์ม้ง ขมุ อาข่า ไทเดิ้ง ไทดำ ลาวพวน และลาวลุ่ม หมู่บ้านและกลุ่มชนเผ่าต่างๆ มีความแตกต่างกันในเรื่องแรงจูงใจและความสามารถในการปรับปรุงการผลิตปศุสัตว์ รวมทั้งความพึงใจในการเลี้ยงปศุสัตว์บางประเภท บทความนี้นำเสนอวิธีการปรับปรุงงานบริการด้านการปศุสัตว์ให้เหมาะสมกับเกษตรกรชนเผ่า ที่ยากจนบนพื้นที่สูง และการอภิปรายถึงความท้าทายและโอกาส ในอนาคตของเกษตรกรบนพื้นที่สูงในการมีส่วนร่วมในการผลิตปศุสัตว์ในภูมิภาคลุ่มน้ำโขง

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Abstract

Livestock production in the Lao PDR is playing an increasingly important role in securing rural household income, saving labor and improving livelihoods in the northern uplands. Traditional systems of low input, free grazing of cattle, buffalo, goats, pigs and chickens are being replaced by closer management practices. This paper describes action research across three northern provinces to improve and adapt livestock practices with farmers from different ethnic groups, genders and environments. District livestock staff worked with farmers from Hmong, Khamu, Akha, Tai Deng, Tai Dam, Lao Phuan and Lao Loum ethnic groups. Villages and ethnic groups vary in their motivation and capacity to improve livestock production as well as preferences for keeping particular livestock. These differences are highlighted in the article along with our research on how to tailor livestock services to poor and remote ethnic farmers in the uplands. The paper concludes with a discussion on future challenges and opportunities for upland farmers engaging in livestock production the Greater Mekong Sub-region.

Keywords: Livestock production, upland livelihoods, action research, ethnic groups, Lao PDR

Introduction

The Lao Peoples Democratic Republic (Lao PDR) is a country in transition, experiencing rapid economic growth in the last decade, reaching over 7% GDP growth in 2009 (MAF 2010). Most of the GDP growth is from the hydropower and mining sectors; however, agriculture and forestry still play a key role in the Lao economy, accounting for up to 30% of the total GDP and employing over 70% of the population (GOL, 2010). Lao PDR

has achieved food self-sufficiency but there are still areas that are deficient in terms of agricultural productivity and human nutrition, particularly in the uplands (MAF 2010). Poverty levels have declined from 33% in 2003 to 25% in 2009. The government wants to further decrease poverty to below 19% of the total population, and poor households to below 11% of total households, by the year 2015 (GOL 2010).

The Lao Strategy for Agricultural Development 2011 to 2020 (MAF 2010, 12) aims to encourage "a gradual transition from subsistence to commercial smallholder production via modernized lowland market-oriented agricultural production and conservation of uplands ecosystems, ensuring food security and improving the livelihood of rural communities." The emphasis will be on "pro-poor and green value chains" targeting domestic, regional and global markets based on smallholder farmer organizations and private sector partnerships. Stabilization of shifting cultivation and climate change adaptation measures are also major goals. Agriculture is already steadily moving from rice-based subsistence farming systems to market-based crop, livestock and timber production (Thongmanivong & Fujita, 2006).

One of the alternatives being developed in upland areas by Lao government agencies and aid organizations is livestock intensification and/or diversification. Livestock production in Lao PDR contributes around 15% to national GDP and 33% of agricultural GDP (GOL, 2005). Demand for meat is increasing, with growing domestic, regional and international markets (Millar & Photakoun, 2008). The Lao government wants to achieve growth in livestock at 4-5% per year, including cows and buffaloes at about 2-3%, and pigs and poultry at about 6% and produce meat at 32 kg/person/year (GOL, 2010).

However, to achieve increases in livestock production requires smallholder farmers to have the desire, knowledge and skills to improve their traditional management systems.

Livestock have long been a part of the traditional upland farming system in Lao PDR. They are generally kept for home consumption, draught labor or as “emergency banks” in times of need, often contributing up to 50% of cash income (Stur et al., 2002a; Parlato, 2006). Animals are left free to roam during the day to forage for food, and they come back to the village at night to be housed and fed. Family members (often women and children) can spend up to 4-5 hours per day searching for fodder and/or cooking it in the case of pigs (Parlato, 2006). Children cannot attend school due to the labor demands and lack of cash for school requirements. There is no control over breeding, very poor health care and frequent animal loss from disease, theft or injury (Harding et al., 2007). Farmers often complain that there is not enough feed in the dry season, and in the wet season they have to keep livestock away from crops, which requires tethering and collecting feed from the forest (Grunbuhel & Schandl, 2005). Selling is opportunistic when cash is needed or an animal gets sick, and often leads to lack of reinvestment in replacement animals to build wealth.

This article describes action research conducted in three northern Lao provinces to facilitate and evaluate appropriate livestock development for different ethnic groups in selected districts. The northern uplands of Laos are populated by ethnic minority groups whose remoteness has isolated them from livelihood developments experienced by the majority lowland population, known as Lao Loum (Schliesinger, 2003). In the uplands, 87% of the population belong to one of 131 distinct ethnic minorities, including the larger groups,

the Khammu and the Hmong (UNDP, 2001; RRDTC, 2010). Government extension services have been recently expanded to the sub-district or "kumban" level, necessitating increasing engagement with ethnic farmers (MAF, 2010). These extension staff are mostly young Lao Loum graduates, with little experience or knowledge of how to work with different ethnicities in remote areas (Photakoun, Millar & Race, 2010).

The first section of the article describes the methodology used to work with farmers and evaluate their experiences with changing livestock management. In the results section, we present data on changes in livestock numbers and pasture area, as well as household benefits from improved livestock management using farmer case studies. We found that villages and ethnic groups vary in their motivation and capacity to improve livestock production as well as preferences for keeping particular livestock. These differences are highlighted in the article along with our research on how to tailor livestock services to poor and remote ethnic farmers in the uplands. The article concludes with a discussion on future challenges and opportunities for upland farmers engaging in livestock production in Lao PDR and for the Greater Mekong Sub-region.

Methods

The project used an action research approach (Kindon 2005) from 2006 to 2009 to assist with training and mentoring of 16 district livestock staff from 4 districts (Phonexai in Luang Prabang province, Khoun in Xieng Khouang province, Viengthong and Viengxay in Huaphan province). Extension staff had some technical knowledge of forages and animal health from previous projects but limited experience working with ethnic minority villages

and facilitating farmer learning. National staff from the Department of Livestock Services (DLF) and National Agriculture and Forestry Extension Service (NAFES) mentored district staff in setting up forage and feeding trials for small and large animals (eg poultry, pigs, goats, cattle and buffalo) to cater to the roles of both women and men in livestock production. Staff were taught how to facilitate meetings across 16 villages and how to measure household changes over time. Monthly staff meetings and six monthly workshops were held to reflect on what was happening in each village (what was working and not working and why), and modify approaches if necessary.

Villages were ethnically diverse, often with combinations of Hmong, Khamu, Akha, Tai Deng, Tai Dam, Lao Phuan and Lao Loum ethnic groups. Gender and ethnic differences in farmer interest, motivation, knowledge and skills began to emerge from case studies developed by staff to document household benefits from changing livestock practices. A cross visit was organized in 2007 for 24 farmers from Viengthong, Viengxai and Koun districts to more advanced farms in Pek district, Xieng Khouang. Village leaders selected the participants. In the same year, a cross visit was also held for 12 farmers from Phonxai district to Pak Ou district. This resulted in mainly men participating, with too many people, too little time and an attempt to try and show everything instead of targeting topics to farmer needs.

To tailor farmer learning more effectively, in 2008 we took 12 Thai Deng, Khamu and Lao Loum women pig farmers from Huaphan province to Luang Prabang province to learn about piglet production. In addition, twelve Hmong cattle farmers (mostly male) from Koun district in Xieng Khouang visited Nonghet district near the Vietnam border to learn more about cattle fattening and trading from their Hmong peers.

To evaluate the impact of these more targeted extension activities, district staff visited these farmers every few months to document changes in livestock numbers and forage area as well as livelihood benefits as shown in the next section. Project staff from Vientiane also conducted semi-structured interviews with 24 farmers in November 2009 to gain more in-depth information on livelihood impacts, as shown in the two selected case studies.

Guidelines have now been developed and tested for new extension staff and other districts on how to work with Khamu, Hmong and Akha villages based on our experiences and available literature on respective customs and preferences. Stories have been produced in digital form in Khamu, Hmong, Akha and Lao languages. These stories show women and men farmers from a range of ethnic groups producing livestock using forages, housing, vaccination, clean water and reinvestment in animals. When shown to new villages in 2010, it became apparent that Khamu and Akha farmers had not seen DVD stories in their own languages before and they expressed a preference for information in their own ethnic voice.

Results

The following results demonstrate the role of livestock in changing livelihoods of upland farmers in terms of total livestock numbers and forage area, and qualitative livelihood benefits. The cross visits and follow up advice by extension staff were instrumental in stimulating farmer motivation to take action, particularly when tailored to ethnicity and gender as shown below.

Changes in livestock numbers and pasture area

Figures 1 and 2 show changes in total livestock numbers and forage area before and after the 2007 cross visits at 4 month intervals until the end of July 2009. Cattle and buffalo numbers steadily increased, while goat and pig numbers were more volatile due to shorter fattening periods and high turnover. They also demonstrate how some farmers have used income from pigs and goats to purchase cattle and buffalo thereby increasing their wealth status. Goats have proven to be less popular due to management issues; however, numbers do fluctuate with market demand in the uplands. The increase in forage area indicates growing farmer confidence in using grasses and legumes for fattening livestock since attending the cross visits. Farmers have been able to invest in more animals, house construction, hand tractors, paddy rice stocks, rice field land, motorcycles, furniture, school, clothes and medicine.

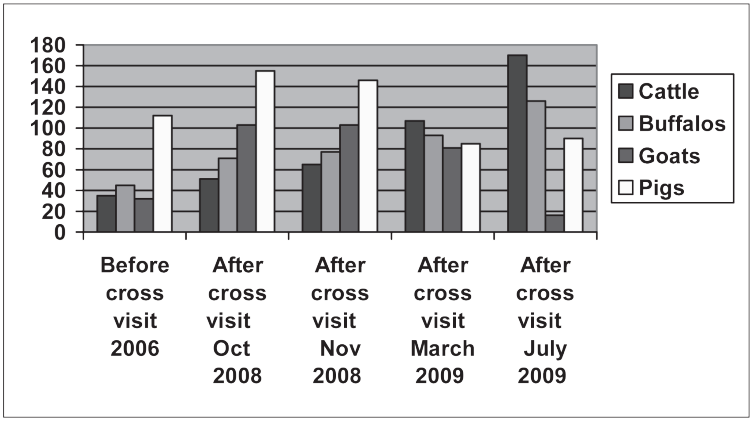

Figure 1 Changes in livestock numbers of 36 farmers attending 2007 cross visits

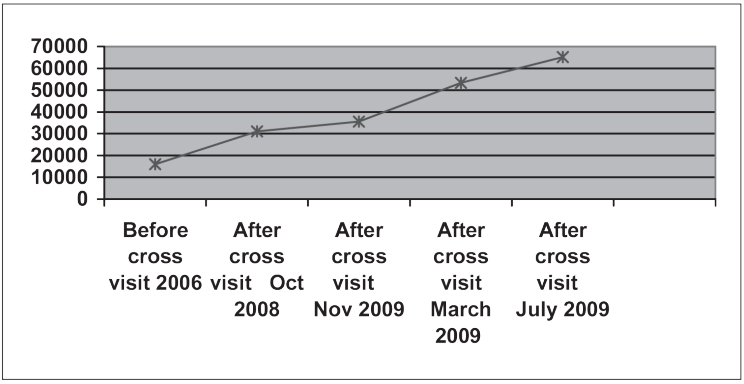

Figure 2 Total pasture area (m2) of 36 farmers attending 2007 cross visits

Figures 3 and 4 show the advances made by Hmong cattle producers after the 2008 cross visit in terms of immediate expansion of improved pasture area and rapid increase in cattle numbers for the Vietnam and Vientiane markets. The decrease in numbers between March and July is possibly due to high demand for beef in April for Lao New Year celebrations. Buffalo numbers have not increased dramatically as they take longer to fatten and are being replaced by hand tractors for ploughing of paddy fields. The women from Huaphan province are from poorer families with little disposable income, however they have managed to invest in pig and goat production on a small scale. With limited land and labor, they can only grow small areas of forages and keep a few animals at one time. However, livestock sales have contributed significantly to household benefits as shown in the case study below.

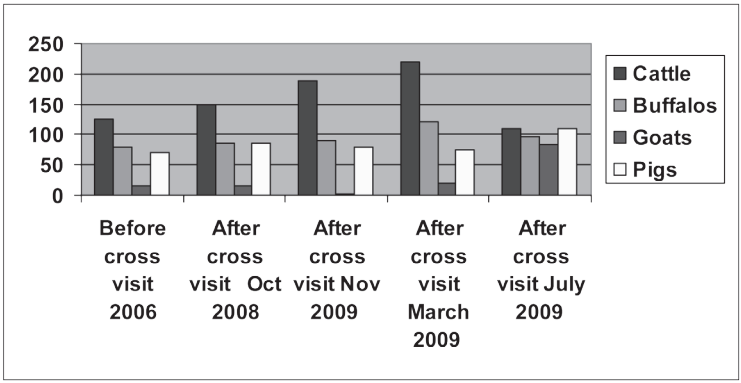

Figure 3 Changes in livestock numbers of 24 farmers attending 2008 cross visits

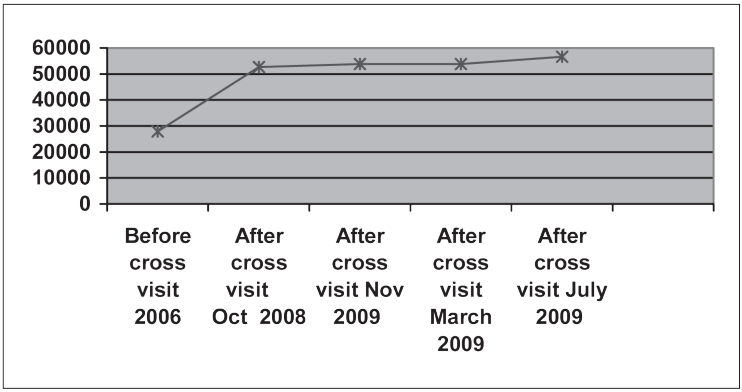

Figure 4 Total pasture area (m2) of 24 farmers attending 2008 cross visits

Evidence of livelihood benefits from livestock raising

The following case studies show how a Khamu woman farmer and Hmong male farmer have benefited from improving their livestock raising methods after attending the cross visits in 2008.

Case study of Ms. Winkham, Khamu farmer who went on women cross visit in 2008

Ms. Winkham is Khamu, her family consists of 7 people including 2 main laborers. She is in Nanom village, Viengthong district, Huaphan province and has 3 pigs. Ms. Winkham went on the women's cross visit in 2008 to Pak Ou district to see intensive pig production. After the cross visit, she built new pig pens with a feed trough and fed the pigs with stylo mixed with rice bran, bon and paper mulberry leaf. She produced piglets for selling. Her pigs were vaccinated and she said up to now her pigs have not died. She sold the young pigs for 3,080,000 kip and bought rice, clothes, a television and 1 sow to continue breeding piglets. Since the cross visit, she has gained knowledge and skills in piglet production, animal health care, stylo hay production and has become the village veterinarian worker in the village. She has passed on her knowledge of how to produce stylo hay and she has expanded the technical knowledge of animal fattening and pasture growing to 20 other families in the village. In the future she will expand her pasture area and increase the number of pigs.

Case study of Mr. Tongsiha, Hmong farmer who went on cross visit in 2008

Mr. Tongsiha is a Hmong farmer from Namneuane village, Khoun district in Xiengkhuang province. His family consists of 8 members with 3 main laborers. Now he has 9 cattle and 3 buffalo. Before the 2008 cross visit to Nonghet he left the cattle and buffalos in the forest, did not vaccinate them and did not have knowledge of livestock production using forages and health care. After the cross visit, he planted forages, built animal pens and started feeding cattle and buffalo using grasses mixing with stylo. In 2009 he sold 6 cattle, 5 pigs and 10 chickens for 16,750,000 kip. With this money he bought 1 hand tractor and 2 cattle to continue fattening. In the future he would like to expand his pasture area and animal numbers and improve animal housing. He would like to motivate other farmers in the village to follow him.

Discussion and Conclusion

Our research found that while a generalized extension approach to improving livestock management in the uplands resulted in major livelihood changes, the families that benefited tended to be already better off than others, with available land and labor to invest in increased livestock production. Farmer learning at village meetings and cross visits defaulted to mainly men's participation as women were not chosen or available to attend. Focussing on all livestock types at farmer events did not cater to the specialization or interests of particular ethnic groups.

By targeting extension activities to cater to women and specific ethnic group interests (eg, pigs for Khamu and Tai Deng women, cattle for Hmong male farmers, pigs for Hmong women farmers, goat and buffalo for Khamu male and female farmers), farmer learning was enhanced and passed on to others. A broader spectrum of farmers became involved as a result. Poorer families came forward or were approached by extension staff to trial some forages and start with a few chickens or a pig. Over time, some were able to slowly increase livestock numbers and/or purchase larger animals for fattening.

Hence, development programs need to take the time to fully understand traditional upland farming systems and farmer needs, with their many cultural and gender based associations (Momsen, 2010; Minh et al., 2010). Farmers need to be involved in trialling and choosing what could apply to their situation (Peters, 2001; Bartlett, 2008; Connell, Stur & Horne, 2010). Tailoring livestock extension services according to ethnicity, gender and wealth capacity, instead of treating everybody the same way can result in increased farmer learning and livelihood impacts.

We found cross visits for targeted groups effective as they allow farmers to talk to one another in their own language and see livestock systems directly. Cheaper methods are to develop case studies of farmers from different ethnic groups on CD or DVD in their own languages. It may take several years of reinforcing such approaches and practicing them in the field before they become mainstream within government livestock extension services. Most agricultural college graduates are Lao Loum with little experience with ethnic minorities. There is a desperate need for more graduates from ethnic minorities that can work with their own communities (Photakoun, Millar & Race, 2010).

Despite the benefits from improved livestock production for upland farmers in Lao PDR, there are still many challenges to overcome. Some of these challenges present opportunities, others seem insurmountable. A major issue for poor upland farmers is lack of available land or money to get started on livestock production. Village leaders, NGOs and government need to work together to enable poor farmers to get into livestock on a small scale with minimal risk or labor requirements (Parlato, 2006; Conroy, 2008; Care International, 2010). Giving animals as donations or offering loans can increase risk for farmers if the animal dies. Hence education and support through models such as village managed livestock banks targeted to disadvantaged households are needed to ensure livestock survive and households can slowly build capital without taking risks (Care International, 2010).

Smallholder livestock systems need to be self-sustaining and not become too dependent on outside resources. Intensive livestock industries may have their place in the lowlands to supply Vientiane and export markets at higher levels of risk. Although market and trade opportunities exist, particularly with Vietnam, China and Thailand, livestock production is hampered by disease outbreaks, illegal movement of livestock and lack of consistent supply (Harding et al., 2007; Cocks et al., 2009). In line with the government agricultural development strategy (MAF, 2010), upland systems should remain focussed on low risk, small-scale livestock enterprises that can supply local markets and nearby export markets (Conroy, 2008).

Remote areas are often discounted as reliable sources of market produce. However they have an advantage with livestock production due to large areas of available land and the fact that livestock are not perishable. A current issue in Lao PDR is the increasing land area being taken up by plantation mono crops such as rubber, banana and timber (Kenney-Lazar,

2010). Livestock become unpopular as they can damage young trees and villagers are often forced to sell them. However as these crops grow, there may be opportunity for livestock to graze between the trees.

In conclusion, small scale livestock production has the potential to improve upland livelihoods in Lao PDR and the Greater Mekong Sub-region. Individual farmers, villages and ethnic groups vary in their motivation and capacity to produce livestock. Farmer learning needs to be tailored accordingly, using local experiences and languages, combined with outside expertise.

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