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CAN COMMUNITY-BASED ECOTOURISM IMPROVE LOCAL LIVELIHOODS? A CASE STUDY OF CHAMBOK COMMUNITY-BASED ECOTOURISM, SOUTHWEST CAMBODIA¹

Introduction

Community-based ecotourism (CBET) has become a popular tool for promoting inclusive growth and creating new sources of income that can also help to protect natural assets such as forest and biodiversity, especially in developing countries (Hernandez *et al.* 2005; Honey 2008; Khanal and Babar 2007; Kiss 2004; Men 2006). Ecotourism is broadly defined as “responsible travel to natural areas that conserves the environment and improves the wellbeing of local people” (TIES 2012). In the context of environmental protection, CBET is a form of community-based natural resource management (CBNRM); like other forms of CBNRM, CBET seeks a win-win outcome, that is, positive synergy of nature conservation and local livelihood improvement (TIES 2012).

Ecotourism in Cambodia has grown rapidly over the last 10 years. The emergence of areas of outstanding natural beauty and special interest such as forests, waterfalls, rivers and wildlife as popular travel destinations has brought the number of ecotourism sites to 56 (Phnom Penh Post 2013). In 2012, the northeastern provinces of Cambodia, where there is considerable potential for ecotourism expansion and improvement, the number of ecotourists increase by 9.7 percent – a total of 53,374 tourists – compared with 2011. Most



The most successful example of CBET, Chambok commune, Phnom Sruoch district, Kompong Speu province, July 2012

of the ecotourists come from France, China, the UK, Germany, Vietnam, Australia, the Netherlands, the US, Switzerland and South Korea. With natural assets such as the Irrawaddy dolphin, the Mekong River, unspoiled forests and mountain scenery, the northeast could attract as many as 1 million

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international and 5 million domestic tourists by 2020 (Phnom Penh Post 2013).

Many articles promote the achievements and potential of CBET, but much of the information available is anecdotal and lacks quantitative data and objective analysis (Kiss 2004:232). Recent systematic review of community forestry, a form of CBNRM, also reveals a dearth of quantitative data, particularly on local people's welfare (Bowler *et al.* 2011). In general, few studies using appropriate evaluation impact design and combined quantitative and qualitative approaches provide a reliable measure of the effectiveness of CBET (Persha *et al.* 2011). Towards filling that knowledge gap, this article presents the main findings of empirical research conducted in Chambok commune, Kompong Speu province, to examine the effectiveness of CBET enterprises in forest conservation and livelihood improvement (Lonn *et al.* 2012).

Objective

The overall objective of this case study is to evaluate the impact of CBET on local livelihoods in Chambok commune. The guiding research question it seeks to address is: Has CBET improved local livelihoods? Specifically, the study aims to compare the main income sources of CBET households and non-CBET households between 2002 and 2010, before and after the establishment of CBET enterprises.

Method

A carefully designed questionnaire was used to collect information on changes in household socioeconomic status between 2002 and 2010. The sampling frame comprised 174 households, about 23 percent of the commune's total population; 77 CBET households and 97 non-CBET households, selected at intervals of 2 along the commune's main and sub-roads, were interviewed in August 2011.

The filled-in questionnaires were checked to ensure consistent, complete and accurate observations including the reasons mentioned for changes in living conditions and when these changes occurred. Information from the household survey was compiled and used to assess the differences in incomes and other characteristics between CBET households and non-CBET households. Information

obtained from focus group discussions and key informant interviews was used to crosscheck and complement the household data.

To assess changes in livelihood status, households were divided into three groups: "slightly better off", "no change" and "poor." Households in the first group reported some improvements in their standard of living such as higher incomes (>USD1/day/person), better housing, increased food consumption and improved food security. Those in the "no change" group had experienced minor hardships or setbacks. Households in the "poor" group had contended with difficult living conditions, for example, low income (<USD1/day/person), no cattle, no assets and poor housing, and some had resorted to relying on help from the community development fund in order to cope.

To gauge ecotourism's potential to generate sustainable and equitable income for local communities, the Gini coefficient, a standard income inequality measure that ranges from zero (complete equality) to one (complete inequality, whereby one person has all the income), was calculated on household incomes from agriculture, non-agricultural activities, forestry and ecotourism.

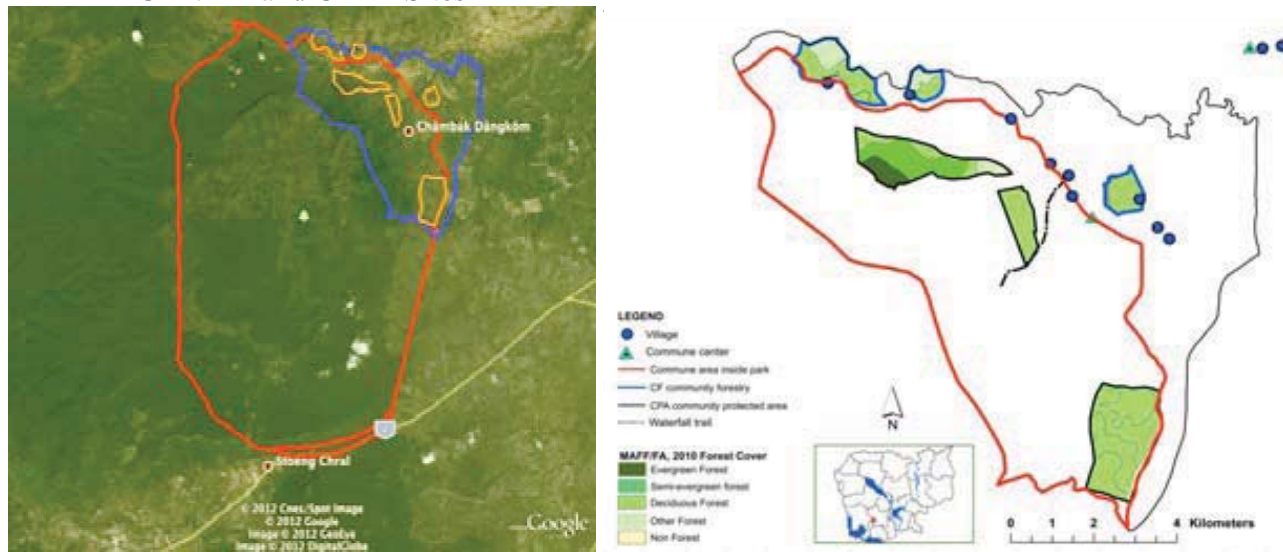
Study Area

Chambok commune, located in Phnom Sruoch district, Kompong Speu province, was selected for case study because of (i) its standing as the most successful example of CBET, (ii) its proximity to a protected area (Kirirom National Park), and (iii) the various forms of CBNRM and CBET operating there. The biggest tourist attraction is the spectacular more than 40-metre high waterfall located in old-growth forest. Other popular tourist activities include forest trekking, cycling, bird watching and visiting bat caves in the area.

The commune consists of four villages and has a population of 3670 persons or 761 households; average household size in 2010 was 4.6 persons.² About half of the commune's total area of 8257 ha falls within Kirirom National Park (Figure 1). There are three types of CBNRM in Chambok: community forestry (CF) areas established by the Forest Administration in 2005 cover 286 ha bordering the national park; community protected areas (CPA) set aside by the Ministry of Environment (MOE) in 2002 occupy 758 ha within the national park; and

² Interview with commune councillor, August 2011.

Figure 1: Chambok Commune and Its Juxtaposition with Kirirom National Park, and Location of CBNRM and CBET Sites



Note: The nine villages marked on the commune map have been amalgamated to form four villages: Chambok Dangcum, Beng, Krangchek and Thmei. Source: Field survey, August 2011; CF area – Forest Administration (2010); CPA area – Mlup Baitong (2011)

CBET sites designated by the MOE in 2003 extend over 161 ha inside the national park (FAO 2012). A few poles and signs marked CF and CPAs at the time of study in 2011, but the CBET sites lacked clear demarcation as the proposed boundaries were awaiting official approval from the MOE.

CBET was established to manage ecotourism activities in the commune in order to provide alternative income sources for forest dependent communities, and to build local forest management capacity and raise local awareness about the importance of sustainable natural resource management for long-term benefits. These activities received initial support from Mlup Baitong (a local environmental NGO) working with the Lutheran World Federation Cambodia (LWF), as well as from the MOE, the Forestry Administration and local authorities. Outside support ceased in 2010, since when the various natural resource management communities in Chambok have been operating independently under their elected management committees with advice from Mlup Baitong and relevant ministries.

Chambok's community-based tourism (CBT) committee, similarly to the CF and CPA committees, is elected every five years. Village and commune chiefs and local authorities are not allowed to serve

on the CBT committee, which has 15 members (leader, deputy, treasurer and representatives from each village) nine of whom are women.³ The CBT committee is entrusted to oversee ecotourism activities, maintain the ecotourism sites, look after the CBT fund and distribute benefit fairly among community members. These three communities have their own internal rules and regulations and work together to protect local natural resources and for local people's prosperity. For example, the CBT committee usually provides some basic financial assistance or equipment for CF and CPA committees' management activities. Anecdotal evidence suggests that forest crime has declined since 2003 because of the regular patrolling of CF and CPAs by local rangers directly paid for by the CBT fund.⁴

Findings

Ecotourism has brought money into the local economy through the generation of new income sources and opportunities; these include:

- Entrance fees – make up 70 percent of total ecotourism income (Men 2006)
- Parking fees – contribute about 14 percent of total ecotourism income (Men 2006)
- Ox-cart rides – bring in about 10 percent of total ecotourism income (Men 2006)
- Bicycle rental
- Selling souvenirs made of bamboo, wood or rattan

³ Interview with the leader of Chambok CBT committee, 24 October 2013.

⁴ Interview with the chief of Pich Antoung village (one of the nine former villages), Chambok commune, August 2011.

- Home gardening and handicrafts
- Tourist guides
- Arts performances by primary school children
- An all-women run restaurant – provides jobs as chefs, servers and kitchen aides on a rota basis for more than 300 women; individual earnings are very small as each woman can only work there for a short period once a year
- Creation of 21 women’s informal saving (self-help) groups
- Forest rangers
- Homestay – a main ecotourism income for individual households; the USD3/night fee is split between the CBT fund (USD0.25), local guide (USD0.25) and the host (USD2.5)

A fundamental aspect of CBET is that community members contribute a fixed percentage of their tourism income or a set fee, which is determined by the CBT committee, to the CBT fund. As Figure 2 shows, the CBT fund does not receive contributions

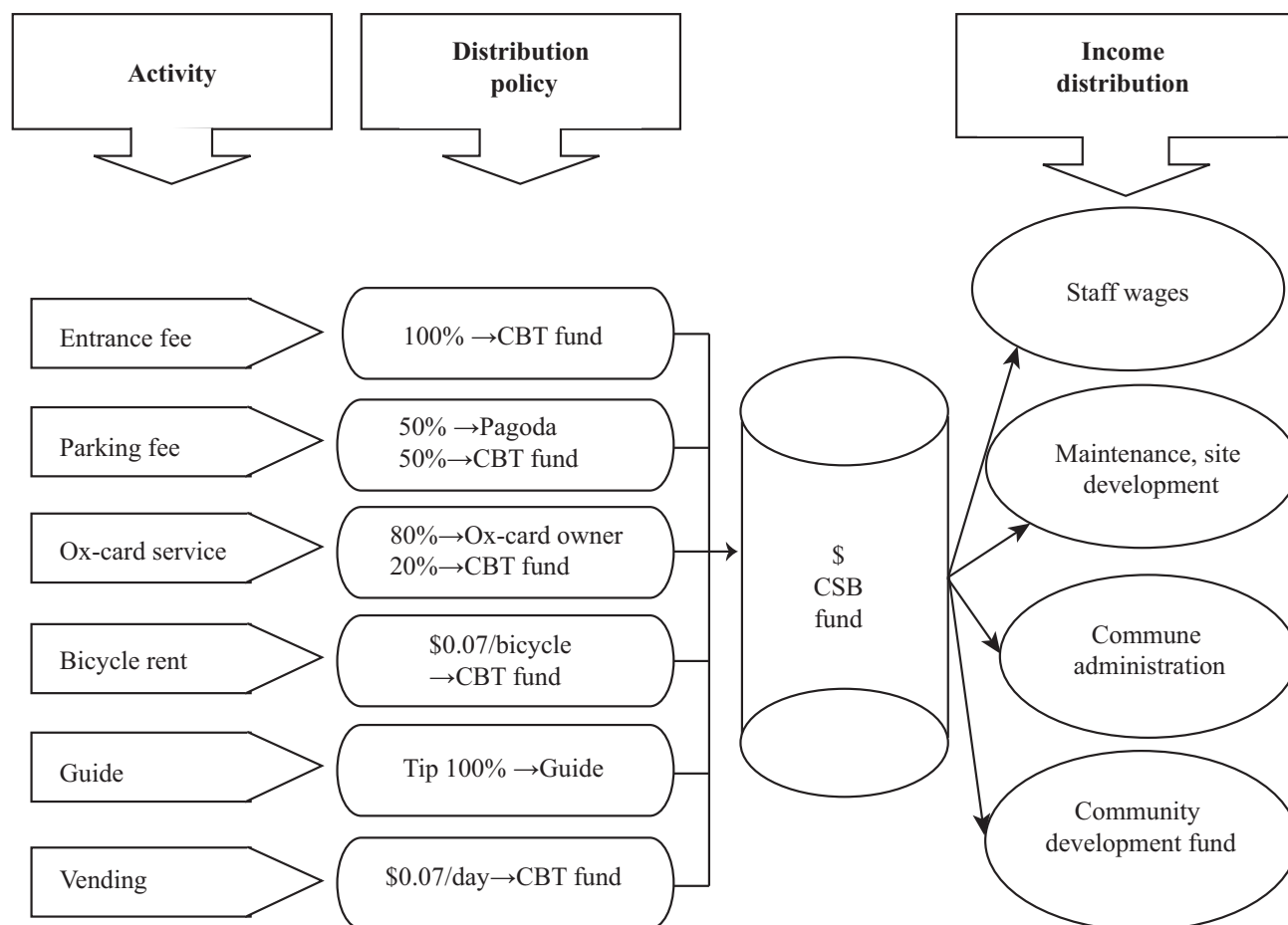
from all ecotourism-related activities, for example, arts performances and the women-run restaurant. The policy needs to be reformed so that the pooled community development fund receives a portion of all tourism revenues.

About 99 percent of the interviewed households felt satisfied with CBET and the number of 11,200 tourists, 80 percent of whom were Cambodian, that visited the area in 2011 (Lonn *et al.* 2012).

It is important to note, however, that not all people in the commune were interested in taking part in CBET activities or had been able to participate equally. For example, in principle, homestays are rotated among households in the commune but only a dozen had houses that were appropriate, i.e., clean, secure, sturdy and big enough to accommodate tourists comfortably. Of the 35 village homestays so far, 13 were in Thmei, 7 in Chambok Dangkum, 9 in Beng and 6 in Krangchek.

When asked about their living conditions, 72 percent of the interviewed households rated their

Figure 2: Income and Expenditure Policy of the CBT Committee



Source: adopted from Men (2006)

standard of living as satisfactory. The results indicate that increased employment for adults (men and women) was the main factor that helped to improve local standard of living, and that CBET contributed to direct and indirect income-earning opportunities for local people. In addition to earnings from ecotourism-related activities (guide, restaurant, handicrafts, ox-cart rides, homestay, and parking and entrance fees), local people generated income from the collection and sale of non-timber forest products (NTFPs), wage labour, and small-scale enterprise/self-employment repairing vehicles and electronic appliances, selling groceries and making cakes. Another positive development was the formation of informal self-help groups, notably women’s saving groups.

As regards income, between 2002 and 2010, ecotourism in Chambok commune generated average annual revenue of USD10,000 (Lonn *et al.* 2012). Based on respondents’ recall of their earnings in the previous year, in 2011 the median monthly income of CBET households was USD74.1 (n=77) and that of non-CBET households was USD64.3 (n=96). The difference is not statistically significant, with Wilcoxon signed-ranked test of $p=0.3675$ at >5 percent level of significance (Table 1). This suggests that in terms of income, CEBT households were no better off than non-CBET households or vice versa.

Table 1: Household Monthly Income (USD) in 2011

	Number of households*	Median	Standard deviation	Wilcoxon test (p-value)
CBET households	77	74.1	112.3	0.3675
Non-CBET households	96	64.3	65.6	

* Of the total sample, only one non-CBET household declined to answer the question on income sources.

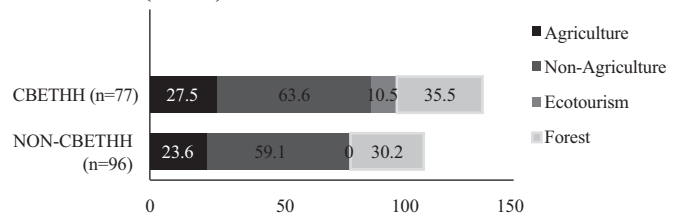
Comparison of the distribution of main income sources among households reveals that ecotourism income, at a Gini coefficient of 0.73, indicates a higher level of inequality than other sources (Table 2). Households in the 20 percent highest income quintile were able to capture 80 percent of total ecotourism income because they have better quality houses suitable for homestay and own assets such

Table 2: Distribution of Household Income in Chambok Commune, August 2010 to August 2011 (percent)

Source of Income	1st Quintile (lowest 20%)	5th Quintile (highest 20%)	Gini coefficient
Agriculture (n=163)	4.4	49.0	0.4
Ecotourism (n=68)	1.0	80.6	0.7
Forestry (n=91)	1.5	62.9	0.6
Non-agriculture (n=130)	1.7	54.2	0.5
Total (n=173)	4.0	48.7	0.4

as ox-carts, whereas households in the lowest 20 percent income quintile have no or limited assets and gained only 1 percent of ecotourism income. Ecotourism contributes the smallest share – 7.7 percent, or USD10.5 – of CBET households’ average monthly income (Figure 3).

Figure 3: Average Monthly Income by Source (USD) in 2011



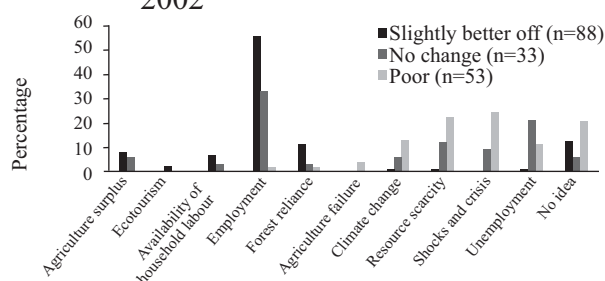
Majority of respondents rated their livelihood status in 2011 as being “slightly better” than it was in 2002. There were more job opportunities available in general (Figure 4); ecotourism was not their main source of income – it was an additional one. Most of them reported having set up small businesses, for example, repairing motorbikes, making cakes and noodles, or selling groceries; others worked as wage labourers for a local teak plantation company. Cash income from collecting and selling bamboo, rattan and mushrooms helped to cover daily expenses. Young people had found employment as garment or construction workers in the town or capital city. As one informant pointed out, without those jobs and income sources (within and outside the locality), efforts to stop overharvesting of Chambok’s forest resources will never succeed.⁵

In terms of job accessibility, households in the “slightly better off” group could rely on a wider variety of jobs and had a greater chance of benefitting

⁵ Interview with a community member, August 2011.

from ecotourism as their houses could accommodate more homestay tourists than the smaller houses of households in the “poor” group. Security was another factor that influenced the success of homestay. Most of the better off households resided in the central part of the commune near the CBET centre, a more secure location for homestays than villages farther away. Despite the policy of hosting guests on a rotation basis to distribute income among all homestay hosts in the commune equally, profits from homestay often accrued to better-off households.

Figure 4: Reasons for Livelihood Changes Since 2002



Source: HH interviews, Chambok commune, Kompong Speu province, August 2011

When asked about changes in their livelihoods, both CBET and non-CBET households in the “poor” and “no change” groups said their standard of living had declined due to lack of paid work and rice yield losses during the 2011 drought (Figure 4). The availability of natural resources was another issue. Population pressure and growing demands on declining forest resources had reduced the quantity of NTFPs households could harvest, further lowering their incomes and limiting their livelihood choices. Besides resource scarcity, lack of household labour and difficulty transporting NTFPs such as bamboo and rattan meant that the majority of non-CBET households could collect just enough NTFPs to survive. In addition, households in both groups reported experiencing illness and death of family members. Caring for a sick family member diverts cash and household labour, and the loss of a family member puts significant pressure on households that already lack productive resources including labour to generate sufficient income.

Discussion and Conclusion

Employment was a main factor behind improvements in local livelihoods. Although Chambok CBET

has attracted many visitors and helped to create direct and indirect jobs and other benefits for local people, the extra revenue generated by tourism has remained small and the new opportunities have provided only supplementary earnings. The study found no statistically significant link between CBET and improved household income. The difference between CBET and non-CBET households’ median monthly incomes can be explained by different NTFP availabilities in each village’s territory, job availability and accessibility, and the unequal distribution of ecotourism income compared to other income sources. Nonetheless, on average, ecotourism generated 7.7 percent of CBET households’ monthly income. The study results support previous research findings that ecotourism attractions and services can provide complementary income sources for the local population (Men 2006; Reimer and Walter 2012; Walpole and Goodwin 2001; Wunder 2000).

Most of the households felt that their livelihoods had improved since the establishment of CBET in the commune, and 99 percent were satisfied with CBET. Yet, the study findings indicate that Chambok CBET is still underdeveloped and much needs to be done to overcome the many difficulties local communities face, especially natural resource scarcity due to unsustainable/unplanned harvesting of NTFPs, unclear land tenure and user rights, no demarcation around ecotourism sites, and inadequate tourism infrastructure (road access, electricity/power supply, transportation, sanitation). Another issue is that local people often lack the necessary skills and knowledge relating to food preparation, hygiene, hospitality, the provision of local guides (and related language skills), site maintenance and environmental management.

Making CBET work to reduce poverty and income inequality faces some critical constraints that need to be eased in order to realise the anticipated economic, social and environmental benefits. In the meantime, CBET clearly has the potential to supplement local household incomes directly and indirectly through the creation of more local opportunities and jobs. A more subtle but equally important benefit worth noting is that the majority (about 94 percent) of people that benefit from ecotourism and related sources of income both lessen their dependence on forest resources and foster positive attitudes and behaviour towards

conservation efforts (Walpole and Goodwin 2001). Future CBET initiatives must consider how to promote fairer distribution of ecotourism income so that poor households in particular are able to reap the benefits of their stewardship of ecotourism sites.

In addition, setting up a local network to provide vocational and skills training related to running an ecotourism enterprise in Cambodia would provide more employment and income opportunities.

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