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Impact of Expanding Rubber Cultivation and Increasing Mechanisation on the Buffalo Population in the Nabanhe National Nature Reserve, Yunnan Province, P.R. China

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Abstract

Due to expansion of rubber (*Hevea brasiliensis*) and increasing mechanisation of agriculture, the buffalo population is decreasing in the Nabanhe - Nationalm - Nature - Reserve (NNNR), Yunnan Province, Xishuangbanna Prefecture, China. This study analyses the current use of buffalo for field work and recent developments in the region's buffalo population, based on interviews of 60 buffalo keeping farmers.

Farms of the NNNR were assigned to 3 classes (C) which differed mainly in two characteristics: altitude and area used for rubber cultivation. C1, C2 and C3 are found at an altitude of 400–1200, 801–1200 and 1201–1600 m asl and have on average 58 %, 14 % and 5 % of their crop land under rubber cultivation.

At present, farmers of C1, C2 and C3 keep on average 1.6, 2.2 and 2.4 buffaloes and crop 2.2, 2.8 and 2.5 ha of land. In C1 75 %, in C2 100 % and in C3 97 % of the farmers stated to use their buffaloes for field work, but only 28 %, 45 % and 57 % of the farmers' crop land is ploughed by buffaloes. The area ploughed by buffaloes remained constant over the last 10 years, although the area of crop land managed per farmer increased. In 1999, the cultivated area of C1, C2 and C3 farms was only 1.2, 2.0 and 1.5 ha, of which 54 %, 75 % and 78 % were ploughed by buffaloes. The decreasing importance of buffaloes is also reflected by the decrease in the number of animals kept: 38 % of C3 farmers kept less buffaloes in spring 2009 than in 2007, for C1 and C2 farmers the respective numbers were 33 % and 25 %. Nevertheless, 14 % (C3 and C2) and 17 % (C1) of the farmers kept more buffaloes in spring 2009 than in 2007.

C2 and C3 farmers plant less rubber and dependent more on crop production and buffaloes' work force than C1 farmers, who mainly cultivate rubber and are highly mechanised already. Although buffaloes are still of importance to C2 and C3 farmers, a further substitution of buffaloes by tractors is anticipated and therewith the loss of an additional meat source for the rural population and of local farm animal genetic resources.

Keywords: Swamp buffalo, land use, mechanisation, Xishuangbanna, rubber

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