

## RESEARCH NOTE

# Mapping ethnic groups in Lao Cai Province, Vietnam

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**Abstract:** *This research note offers a brief summary of recent cartographic work in the province of Lao Cai in northern Vietnam, with a specific focus on the districts of Sa Pa and Bac Ha. By providing a representation of topography in digital format, which enables a connection between demographic and physical variables, the long term aim is to illustrate the relationship between ethnicity and topography.*

**Keywords:** *Vietnam, Lao Cai Province, ethnic cartography, anthropology*

Studying ethnic minorities in the north of Vietnam can be a sensitive issue for the Vietnamese State. Due to cultural identities in the highlands being different from those in the lowlands, as well as the fact that many amongst these mountain societies are located in border areas with geo-strategic importance, the study of these groups is both delicate and difficult for the foreign researcher. For this reason among others, very little has been published recently on peoples in these highlands. This research note offers a brief summary of our work in the province of Lao Cai (see Figure 1a), one of the remote mountainous areas in northern Vietnam that is officially labelled a ‘sparsely populated area’.

The aim is to illustrate the relationship between ethnicity and topography. It is hoped for example that this research project, by providing a representation of topography in digital format, will enable a direct connection between demographic and physical variables and provide tools for the evaluation of derived elevation variables such as slopes, watershed limits, and so on. When conducted at province level such a study unavoidably omits details and patterns only visible at a closer range. Therefore more detailed observations have been

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drawn for the Sa Pa and Bac Ha districts in Lao Cai province, see Figure 1b. However, the analysis of this material still remains to be completed and the maps presented here, all of which have been produced in the course of a Canada-UK project,<sup>1</sup> and have not been published before, should be approached with this restriction in mind.

Physical data as well as the administrative boundaries of 1994 have been provided in digital form by the Vietnam Department of Land Administration (DLA). These can be connected to demographic data through a Geographical Information System (GIS). The GIS package, *MapInfo* in this case, a rather simple, yet relatively powerful vector-based software, provides a strong research and analysis tool for modelling and evaluating the links between ethnic groups and their physical environment. Based on the contour lines digitised by the DLA, the Digital Elevation Model (DEM) was produced using the *Vertical Mapper* interpolation utility. The results are shown in Figures 1c (as well as Figures 3a and 5a).

The demographic data for the provincial and district levels was obtained from the database completed by the DLA, based on data from the *Vietnam Statistical Yearbook 1994*. They provide a broad overview of both the population densities and ethnic distributions within the province (as shown in Figure 2a and b respectively). The maps also draw on demographic and cultural data collected in 1999 at the commune (*xa*) level by researchers from the National Center for Social Sciences and Humanities in Hanoi.

Even though demographic data collected at the *xa* (commune) level can be considered reliable, this data is not recent (1994, based on the 1989 census) and does not apply uniformly to the whole province. The acquisition of more recent data would be rather difficult since the results of the 1999 census were not available and the ethnic composition of the population is still considered a sensitive issue in Vietnam.

## IN LAO CAI PROVINCE

As Figure 1c suggests, topography has a strong influence on human activities. In the north of Vietnam it also induces a temperature gradient that makes some relatively high altitudes much cooler than the Red River Delta. The area has a high humidity level, the Hoang Lien Range having a barrier effect on atmospheric circulation. Its eastern half is cool and humid, with a high frequency of fog and cloud. Life in this area is therefore harsh and health problems are a real concern. In order to fight the everlasting dampness, fuelwood consumption is high, which helps explain the small quantity of forest resources remaining in this part of the province.

Another physical constraint also apparent from the elevation map, Figure 1, is the high proportion of steep slopes, especially in Sa Pa district. Combined with the level of deforestation in the province, steep slopes enhance the sensitivity to erosion of cultivated or barren lands. In Sa Pa district, this physical constraint has produced widespread use of cultivated terraces, even though this district is populated by a majority of Hmong (52 per cent), a group for whom this type of

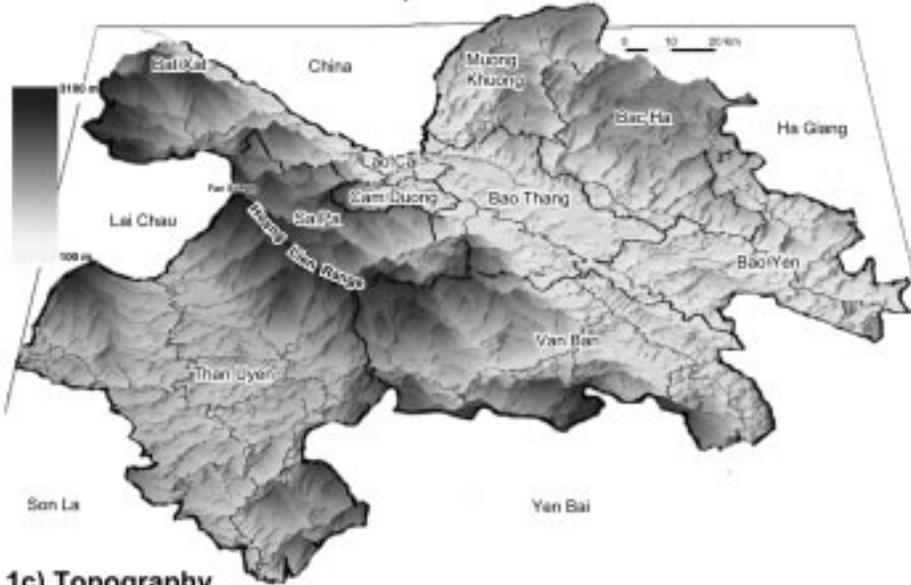
Fig 1 Lao Cai Province



1a) Location



1b) Administrative Districts circa 1994

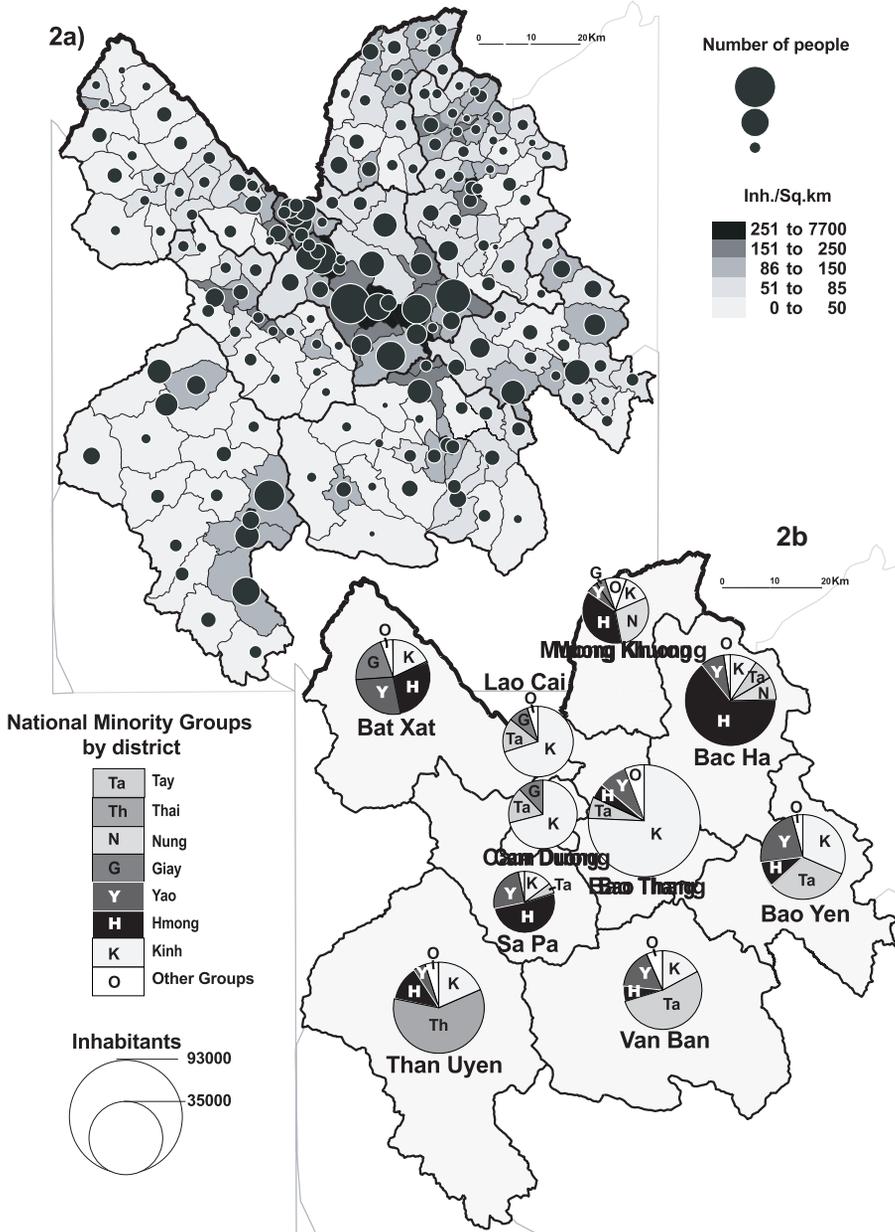


1c) Topography

Source: General Department of Land Administration, Hanoi, Vietnam, Production: Yann ROCHE, UGAM

Figure 1. Lao Cai Province

land use is unusual elsewhere in Southeast Asia. For the Hmong though, and to a lesser extent for the Yao (their linguistic cousins and the second most important minority group in the province) steep slopes do not represent a serious obstacle, either in terms of cultivation or in terms of establishing villages.



Source: General Department of Land Administration and National Center for Human and Social Sciences, Hanoi, Vietnam. Production : Yann ROCHE, UQAM

**Figure 2.** Population and population density by commune, 1994 and ethnic composition by district, 1994

Data at the district (*huyen*) level is much easier to access. However, the highly dispersed spatial distribution of the ethnic minority groups in Lao Cai makes a map based on ethnic data at district level of little use. To solve this problem, the spatial data has to be collected and mapped at least at the *xa* level and

ideally at the *ban* (village) level which are more ethnically homogeneous. The number of *ban* in Sa Pa and Bac Ha districts is over 200 posing data collection difficulties which are compounded by the problem of locating each *ban* on a map. Several *ban* and hamlets have moved over the last decades and Vietnamese cartographers have not always kept up with the changes. Topographic maps which are currently available to foreign researchers are either too old or not accurate enough to be used and buying aerial photographs is a difficult task for the non-Vietnamese. Because of these predicaments, the maps presented in this note focus on data available at the *xa* level only, although the *ban* level is much more ethnically homogeneous and therefore more appropriate for research with an anthropological concern.

Historically, Lao Cai town has been a crossroads, as the Red River Valley was a major communication axis between the Delta and southwest China. Yet, away from the valley itself, it is a remote area with an under-developed road network. As the scale in Figure 1c suggests, elevations range from 100m along the Red River Valley, to the summit of Vietnam, the Fan Si Pan (3143 m) in the vicinity of Sa Pa.

The overall population density of Lao Cai province is low, with 60 inhabitants per square km in 1994. This population is unevenly distributed, ranging from 204 inhabitants/km<sup>2</sup> in Lao Cai town district, to 32 in Van Ban district. Figures 2a and 2b stress the impact of the Red River Valley as a communication axis and a population centre, especially in the districts of Lao Cai, Cam Duong, and Bao Thang. Not surprisingly, three quarters of the population of these districts are Kinh.

The population numbers for the province are low (491, 000 inhabitants in 1994) with a large proportion from National Minority groups (35 per cent Kinh only, compared with 20 per cent H'mong [Hmong], 15 per cent Dao [Yao] and 30 per cent other National Minority groups).<sup>2</sup> Figure 2b uses data gathered at the district level to show a strong relationship between topography and the location of the Kinh in the lower lands. This relationship can also be observed in Figure 2a, between elevation and population density, with most of the population located along the lowlands of the Red River Valley.

Elsewhere in the province, densities decrease drastically. Kinh are present, but in smaller numbers and proportions, and are chiefly concentrated in towns. In several of these districts, the majorities consist of one specific minority group, although a different one in each district: more than half the population of Than Uyen is Thai, while in Sa Pa and Bac Ha it is the Hmong who dominate, as for the Tay in Van Ban. Bat Xat, the northwestern tip of the province, is more heterogeneous, with 75 per cent of its population almost equally divided into Hmong, Yao and Giay.

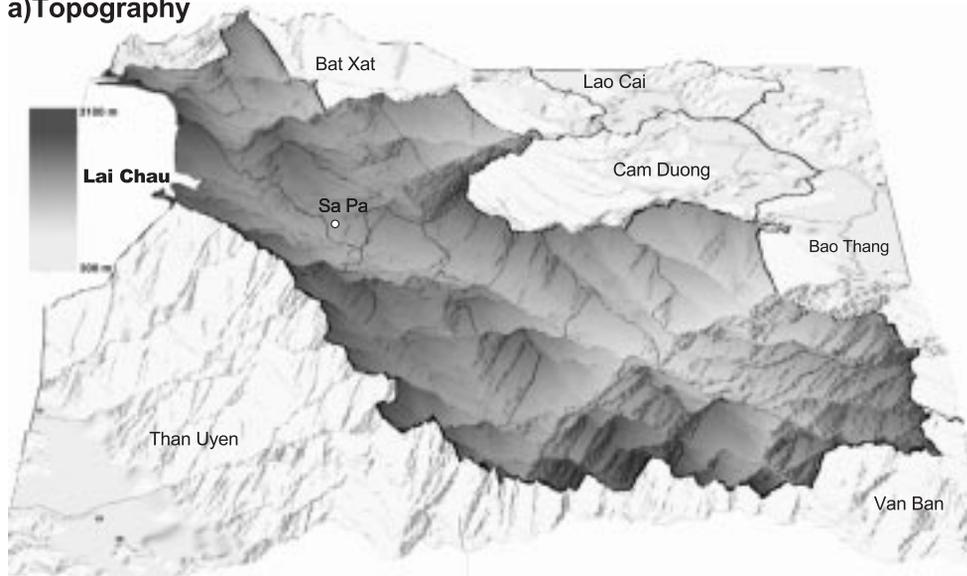
## THE DISTRICTS OF SA PA AND BAC HA

The districts of Sa Pa and Bac Ha have been chosen for more detailed examination because of their high proportion of National Minority groups, their topography, and their less extensive contiguity with China, a factor which otherwise would have raised security issues for the Vietnamese authorities.

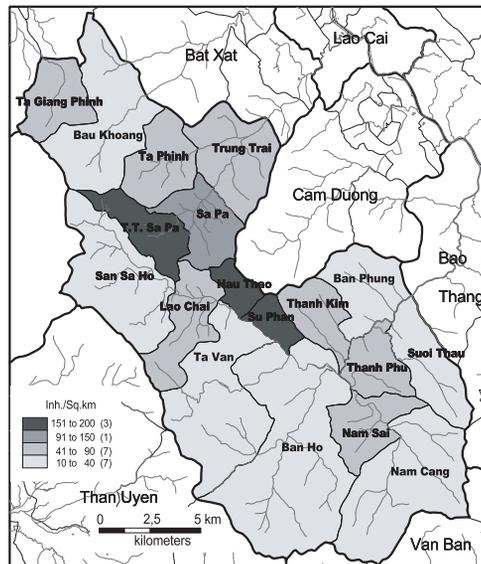
While maps showing the distribution patterns of major ethnic groups as well as the distribution of Kinh have been produced, as detailed in Figure 2b, this paper focuses on the results for Hmong, Yao and Kinh only, the main groups both in the province and in these districts (Figures 4 and 6).

The topography of the Sa Pa district is shown in Figure 3a, its population density in Figure 3b and the ethnic composition in Figure 4. The population of

a) Topography

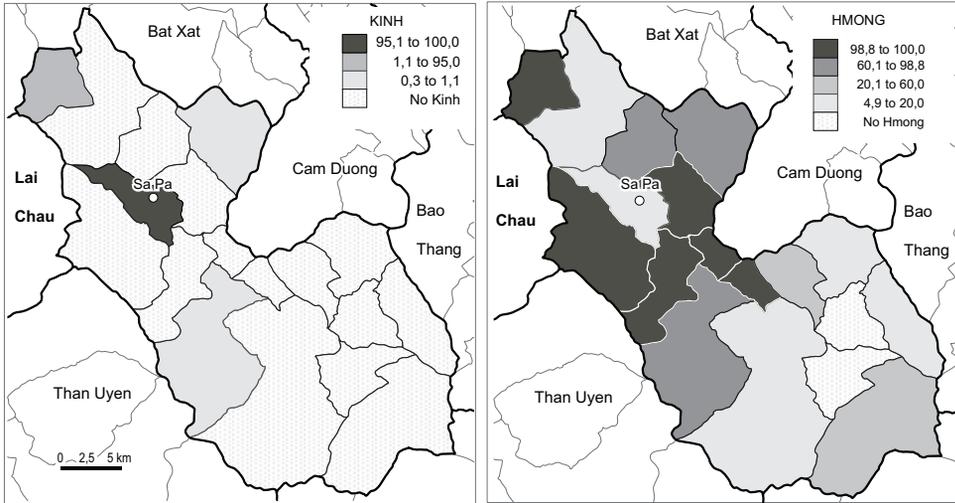


b) Population Density, 1994



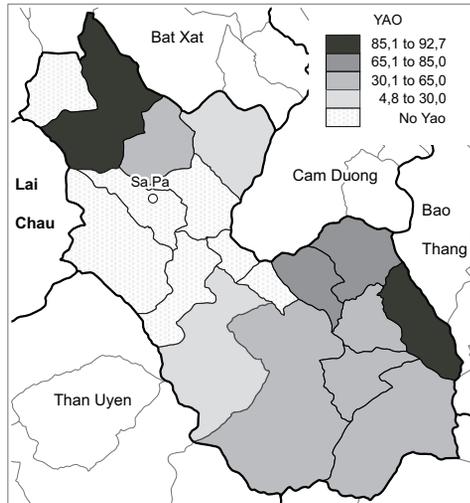
Source: General Department of Land Administration, Hanoi, Vietnam. Production : Yann ROCHE, UQAM

Figure 3. Sa Pa District



4a) Proportion of Kinh

4b) Proportion of Hmong



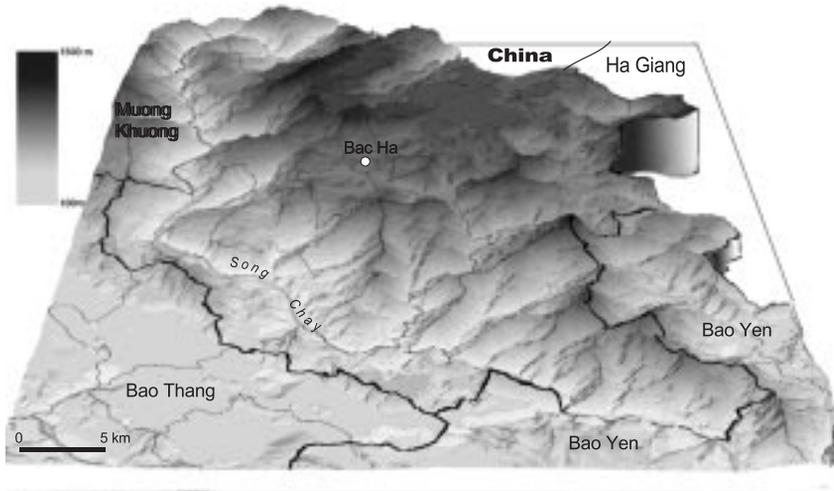
4c) Proportion of Yao

**Figure 4.** Ethnic Composition of Sa Pa District, 1994

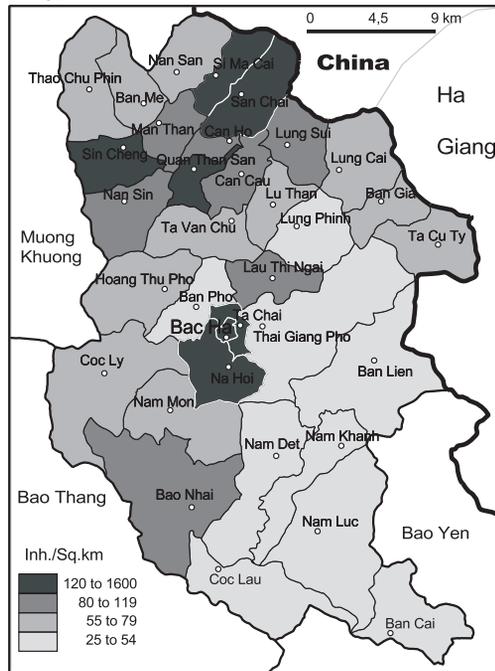
the district reached 28,539 habitants in 1994. Sa Pa town is the major population centre of the district and as one travels away from it, population density decreases as seen in Figure 3b, the pattern of population density of the district being roughly concentric around Sa Pa town.

As Figure 3a reveals Sa Pa is a high altitude district. Accordingly, it has one of the smallest proportion of Kinh in the province (Figure 2b); indeed, should Sa Pa town be removed from the district, the Kinh who make up 15 per cent in 1994 would virtually be wiped off the district population map. While the Hmong majority (52 per cent) is typically established in the highest communes (Figure 4b), the Yao (25 per cent) are immediately below but mix with the Hmong in several communes (Figure 4c). The other minority groups dwell

a) Topography



b) Population Density, 1994



Source: General Department of Land Administration, Hanoi, Vietnam, Production : Yann ROCHE, UQAM

Figure 5. Bac Ha District

essentially in the south-east, a region that is not low enough nor appealing enough to attract spontaneous Kinh settlers.

Bac Ha district, in the northeastern part of the province, is a hilly area, deeply carved on its western boundary by the Chay River, as illustrated in Figure 5a. Its climate is hotter and drier than Sa Pa. Although Bac Ha, with

Fig. 6: Ethnic Composition of Bac Ha District, 1994

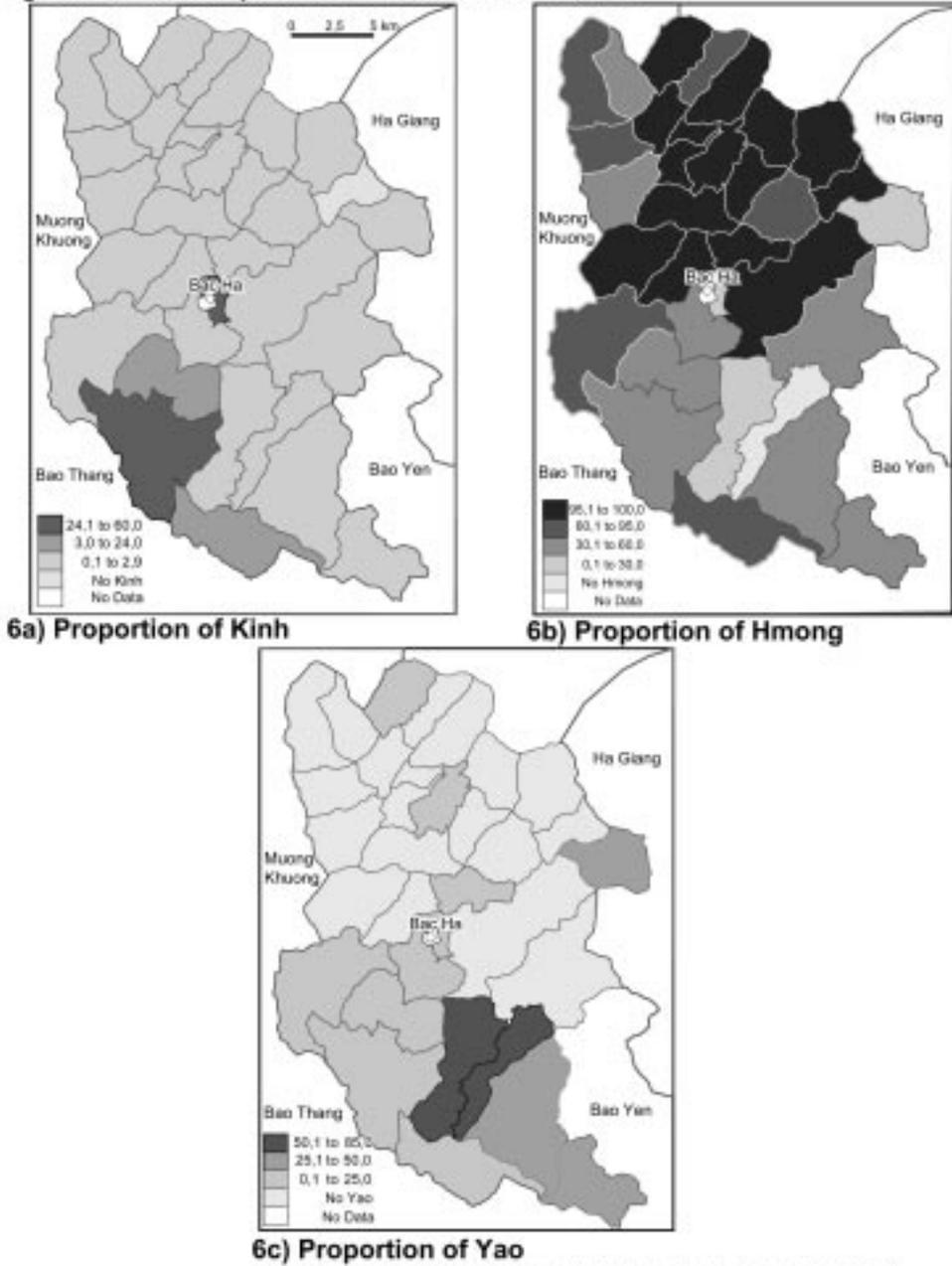


Figure 6. Ethnic Composition of Bac Ha District, 1994

62,693 inhabitants in 1994, is twice as populated as Sa Pa, the population density is only 50 per cent higher: 60 inhabitants/km<sup>2</sup> (versus 39 in Sa Pa), and is also unevenly distributed as apparent from Figure 5b.

The more densely populated areas located Bac Ha town, as well as the town itself, are inhabited predominantly by the Kinh, shown in Figure 6a; whilst Figure 6b illustrates the prominence of the Hmong majority in the mountainous northern part of the district. At 65 per cent, the Hmong represent the majority of the population of the district, while the eight per cent Yao constitute a 'buffer' between the highlands and the lowlands of the district as seen in Figure 6c. The majority of the Kinh not located in Bac Ha town are in the southern and lowest part of the district. However, even though they may sometimes be small in numbers, seldom are they totally absent from the more remote communes, where a few will represent the State in various services.

The next step in this research is to establish a quantitative comparison between the distribution of ethnic groups in the study area and the kind of elevation, slope, vegetation cover they traditionally live in. The maps presented here show that this comparison is possible at a satisfactory level of detail and accuracy, provided that the necessary data can be acquired and processed. Ultimately, it is hoped that GIS technology will make it possible to model this cultural link in order to compare the situation in Lao Cai province with other mountainous provinces in northern Vietnam.

## NOTES

- 1 'Cartographie ethnique et culturelle de la province de Lao Cai, Vietnam. Un projet pilote.' Social Sciences and Humanities Research Council of Canada, 1998–2001.
- 2 Ethnonyms in brackets follow the most common internationally accepted usage for these ethnic groups, and are used throughout this paper.

