

Indigenous knowledge assessment of wild and cultivated legume germplasm in Bac Kan province: An on-going research in North Vietnam

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Introduction:

Fast growth of population and demand for resources are increasingly leading to the transformation and degradation of ecosystems (Figs. 1-3) contributing to the destruction of natural habitats in North Vietnam, followed by the subsequent loss of genetic diversity. A main risk of progressive genetic erosion lies in the loss of landraces and/or wild plant populations that are adapted to local conditions, and in the interdependent loss of local knowledge concerning the use of this genetic diversity. In this context, legumes are particularly important due to their multifunctionality (soil improvement, contribution to human and livestock food security (Fig. 4) and natural resource management). Therefore the assessment of indigenous knowledge concerning genetic resources of legumes is an essential part of natural resource conservation.



Fig. 1: Shifting cultivation: recently cleared forest area

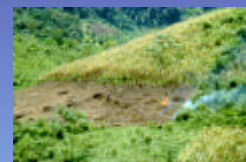


Fig. 2: Slash and burn practices



Fig. 3: Erosion caused by overgrazing



Fig. 4: Buffalo grazing natural fallow vegetation with wild legumes

Objectives:

The objectives of the project are:

- to explore the role of wild and grain legumes (Fig. 5) in the prevailing production systems, and
- to investigate the traditional use of legumes with a view to revive or strengthen this use by enhancing cultural awareness of legume genetic resources. Thus, the productivity and sustainability of farming systems could be improved.



Fig. 5: example of 2 different varieties of Mucuna grain legume



Fig. 6: Presentation of the herbarium



Fig. 7: Drawing a seasonal calendar

Methods:

The indigenous knowledge assessment was carried out in 7 villages of Na Ri district, Bac Kan province, from June to August 2000. A herbarium voucher containing a pre-selection of legumes was shown to a range of village informants belonging to different ethnic minorities to understand local botanical classification systems, and to observe and identify different ways in which legumes are used (Fig. 6). Limitations and opportunities of the agroecosystem were documented by drawing seasonal calendars (Fig. 7). All interviews were conducted in a semi-structured way involving questionnaires and short field notes.

Results and Conclusions:

Though differences were not great, the Nùng minority showed the most advanced, the Dao minority the least advanced knowledge of wild legumes. All three minorities recognised >70% of the presented herbarium species. An average of 30% of the legumes were identified by associating local names to the samples. Traditional uses (medicine, green manure, human and animal food...) were reported of approx. 25% (Fig. 8). The Tày minority cultivated the widest range of different legumes whereas households without any cultivated legume species were most frequent among the Dao minority (Fig. 9).

The traditional uses of wild legumes and local landraces are decreasing because of improving health care and market access, increasing availability of modern varieties, and decreasing subsistence-oriented production systems. In addition, unsustainable use of natural resources due to high population density and increasing poverty in remote areas are leading to progressive genetic erosion. Therefore, the conservation of legume germplasm is important in order to counteract the continuing loss of wild legume species and local varieties. In general, cultural awareness of the importance of local varieties and the value of wild species is underdeveloped and should be improved.

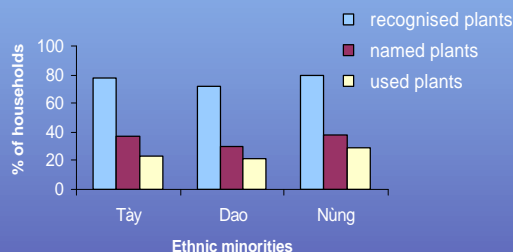


Fig. 8: No. of households of different ethnic minorities identifying wild growing legumes

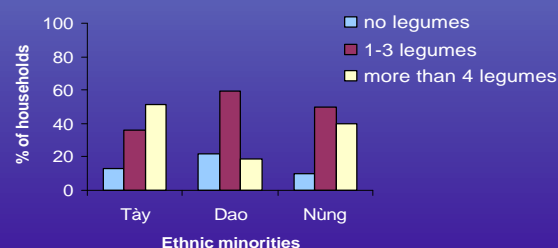


Fig. 9: No. of different legume varieties/species integrated in production systems of different ethnic minorities