The Moroccan mountain tourism industry has grown considerably since it first emerged in the 1980s. Its success can be attributed, in part, to the widespread use of pack mules and muleteers for this leaves trekkers free to carry a small day pack, whilst the mules assure the transportation of rucksacks, camping equipment and other essentials. This new industry has been grafted onto a traditional agro-pastoral way of life but the resources available to study and manage the negative consequences that arise when age-old traditions are transformed by tourism are limited. In this case, the socio-economic and socio-cultural impact(s) on local communities have been commented upon1,2 but those impacting on animal welfare have, until now, received little or no attention.

Where previously mules only had to worry about whether they had a good master, their lives and welfare now depend on the actions and priorities of agents who they may never set eyes upon. Where these third parties are all powerful but not all-seeing, the needs and views of mule owners and their mules are typically overlooked. The industry thus fails to ‘know’ the mule.

The year-on-year improvements made to the practice of the muleteers working at Morocco’s guide training school, the Centre de Formation aux Métiers de Montagne (CFAMM), have been documented. As with tour agencies, the authorities and decision makers at the CFAMM are far removed from the reality of life for mules and their owners on expedition. The impact of their choices, decisions and priorities on the mules are invisible, hidden behind middle men, and must be highlighted in order to demonstrate that change(s) is / are needed.

Three particular problems have been identified and are being addressed at the CFAMM:

- **Overloading**: A lack of understanding surrounds the maximum and recommended weights a mule can be expected to carry. Surprisingly, much of this misunderstanding stems from owners who exaggerate their mules’ ability and fail to consider the longer-term impacts. Tour agencies and others officials are, however, equally if not more culpable where they fail to set norms that respect the animal.

  Bags are rarely if ever weighed and the amount carried goes unchecked, frequently exceeding 100kg, sometimes even 150-200kg, to which the weight of the rider then needs to be added (Fig. 3). The use of scales by the students of the CFAMM has highlighted the overloading that led, in one case, to a stress fracture of a distal phalanx.

- **Failure to assess mules and their equipment**: It is uncommon for mules and their equipment to be examined prior to departure in order to ensure they are fit to work rather than ‘capable of work’. This makes it difficult, if not impossible, to implement any checks and pre-empt problems that can impact on a mule’s welfare during the course of a trek. The saddle blanket is rarely removed and examined to ensure that mules are free from sores and that the pack saddle is made-to-measure, well maintained and will protect the mule. Traditional thick woolen ropes and nose bags are rarely seen now and have been replaced with plastic rope and flour bags, whose use is problematic. These issues are being addressed at the CFAMM.

- **Failure to provide supplementary feeding**: Increases in the length of the working day and work intensity, together with a failure to appreciate the changes in nutritional demands required to ensure mules maintain condition and don’t become vulnerable to saddle sores continue to challenge the industry. The traditional reliance on barley as the only concentrate, widespread reluctance to incorporate oil as a supplement and failure to provide a budget that ensures muleteers do not have to compromise on feed quality all need to be addressed.

This communication draws on the findings of ethnographic fieldwork conducted (2009-14) into the many subtleties of the animal-human relations that arise within the industry. The data from this field work is rich in detail and reveals many of the socio-economic problems that must be more fully understood if animal welfare is to be improved; these include the lack of options and solutions available to muleteers in the absence of support from the wider industry.

**Figure 1**: The Moroccan mountain tourism industry has embraced the mule as its means of transport in the mountains but has failed to consider how the mules’ needs are to be serviced and their welfare protected.

**Figure 2**: The relationships that exist within the mountain trekking industry and the responsibilities that arise from these relationships are complex. The client seeking to undertake a trek or expedition in the Moroccan High Atlas may or may not contract with a foreign trekking company, who by law has to work with an in-country (Moroccan) agency. The Moroccan agency will typically then employ a Moroccan Mountain Leader to lead the trek/expedition.

**Figure 3**: This mule is carrying more than half its body weight. If the owner’s weight is also then added, the load exceeds 220kg!

**References**