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Global networks: a reply to Khuroo *et al.*

We agree with Khuroo *et al.* (*Front Ecol Environ* 2009; **7**[8]: 408) that now is the time to act to prevent plant invasions into mountain environments, and that international cooperative efforts should address these invasions in developing nations.

Conducting global initiatives among scientists can be difficult – common methodologies must be developed for surveys and experiments and funding obtained by the research participants. However, convincing governments and stakeholders to take action to prevent and mitigate complex environmental problems is a much more difficult task. Research into biological invasions is clearly skewed toward developed countries, where most scientists and funding sources are located (Pyšek *et al.* 2008; Nuñez and Pauchard 2009); mountain plant invasions

are no exception. Global networks such as MIREN (Mountain Invasion Research Network) can help to reduce this disparity, by developing core research projects where specific questions are addressed through surveys and experiments that can then be applied to all mountains (Kueffer *et al.* 2008). MIREN was co-founded by scientists from a developing country in South America (Chile) and has recently incorporated partners from both Asia and Africa. Our research protocols are publicly available, allowing new partners to collaborate. Although it would be useful to include as many regions as possible in MIREN, logistic and funding limitations can complicate matters. MIREN has strengthened its work by making alliances with other, larger global networks such as GMBA, MRI, GLOCHAMORE, *et cetera* (Dietz *et al.* 2006).

We believe that management of plant invasions in mountain environments is an international challenge (Pauchard *et al.* 2009). In developed countries, such invasions are due to increasing urbanization, tourism, globalization of ornamentals/cultivars, and climate change. Additionally, in developing countries, agriculturally driven land-use changes are occurring at an accelerated rate because of increasing human populations. However, the mountain biome is still relatively uninvaded, and this offers a rare opportunity to prevent plant invasions.

Prevention is a far more cost-effective management strategy than attempting to eradicate or control already well-established, non-native species. Now is the time to build capacity for preventive measures against plant invasions in mountains. This must happen on a global scale, including less-developed regions. Unfortunately, biological invasions are usually not a priority for policy makers and land managers in both developed and developing countries. Even in low-elevation areas, where invasive species have caused serious environmental and economical problems, the response has been slow. In developing countries – where funding for conservation initiatives is scarce – experience in controlling biological

invasions is almost nonexistent (but see the Working for Water Programme, South Africa and Nuñez and Pauchard 2009).

MIREN has made education and outreach a priority in its global program, by highlighting the local importance of this issue in each region, while maintaining an international framework that enhances the public impact of our research (eg McDougall *et al.* 2009). Global networks offer opportunities for integrative approaches in science, where collaboration can enhance our understanding of generalities in ecology and spread the message to a global audience. Our findings need to be influential in the management of biodiversity worldwide; plant invasions into mountain environments are no exception.

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