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How research networks can help BRICS countries combat invasive species

BRICS countries (Brazil, Russia, India, China and South Africa) should establish more networks of researchers dedicated to invasion science if they wish to curb the spread of invasive specie within and outside of their borders. This is one of the major recommendations of an internationa study published in the journal PLoS Biology recently.

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"BRICS countries are home to a large proportion of the world's biodiversity which is threatened by among others, invasive species, habitat conversion, exploitation, climate change and pollution. To protect this rich biodiversity against invasive species in particular, these countries must form a facilitated network of existin invasion biologists and social scientists with specialties across their biomes (ecosystems characterised b their distinctive association of plants and animals)," says lead author Prof John Measey from the Centre fo Invasive Biology at Stellenbosch University. Measey conducted the study with colleagues from universities and research institutions in other BRICS countries.

He says that while developed countries are producing policies to reduce the flow of invasive species and control or eradicate existing invasions, most developing countries are under-resourced to tackle either aspect without help.

'Facilitated network' model

Helping to address this, Measey and his colleagues came up with a model for a 'facilitated' network and made suggestions of how it could be implemented by BRICS countries to meet the next set of targets of t Convention on Biological Diversity (CBD) in 2030.

"Implementing a proactive 'facilitated network' model is urgently required to build capacity and stimulate effective appropriate invasion science. Equal to the requirement of rapid responses to research of emerg alien species is the need to substantially increase the capacity to tackle existing and future invasions in BRICS countries."

Measey says while the standard approach to building institutions is to concentrate resources at a single location, a facilitated network approach would allow BRICS countries to respond efficiently to invasion threats and to build and maintain capacity for the future.

“Capacity built by the networks can be rapidly absorbed into government and NGO sectors, and there will l an assured continuation of invasion biologists in academic positions. Once established, these networks ca form cross-network links – building on the response of the global network on biological invasions – to positively influence the global response to invasions among developed and developing countries alike.”

Hub-and-spoke model

Measey points out that this network revolves around a hub-and-spoke model that draws on existing excellence in invasion biology research within each country to quickly grow capacity and collaboration.

“The hub (at the institution of the director) contains administrative staff to facilitate the network and disburs finances to core team members (CTMs), already employed through their home institutions, and their associated researchers.

“While the hub may serve as a physical home representing the network, the network serves to study invasions in multiple contexts within the often-unique cultural and biological situations that exist elsewhere the countries.”

Measey adds that a facilitated network would allow for annual research meetings where all CTMs and students can be brought together in a conventional conference.

“It will also create opportunities for funding to have international plenaries present contextual, cutting-edge research that will include representatives from other BRICS networks.”

He calls for social scientists to be included in this network, adding that when it comes to tackling problems such as invasive species, economics and psychology traditionally took a back seat.

Interconnected facilitated network

Measey says it is important to have a network of dedicated researchers because BRICS countries share invasive plant and animal species and also have large areas with matching biomes. He adds that some of the world’s most highly impacting species also come from these countries.

“These commonalities among BRICS countries call for an interconnected facilitated network dealing with invasive species.”

Measey points out that, as signatories of the CBD, BRICS countries are busy preparing their responses to the CBD’s Aichi Biodiversity Target 9, which include the need to recognise invasive species, as well as to determine by 2020 the ways in which they spread.

“Once the Aichi targets have been met, the CBD will set new targets relating to invasive species. Meeting new targets will require growing national capacity of invasion scientists with knowledge that relates to spec biomes within each BRICS nation.

“Achieving this will require more than the transitory international collaborative projects advocated previousl

but rather in-country institutions that can maintain recruitment and extend beyond the careers of individual researchers, extending scientific knowledge to applied management carried out by government institutions and the non-governmental organisation (NGO) sector."

Measey is optimistic about the impact of a network of researchers in each of the BRICS countries, saying that it could start making meaningful policy input as well as building capacity within their country and positiv influencing their region within five years, and with minimal cost to each host nation.

He adds that an increased number of networks of researchers dedicated to invasion science will ultimately be beneficial to all.