



INVASIVE ALIEN SPECIES

"Invasive alien species are emerging as one of the major threats to sustainable development, on a par with global warming and the destruction of life-support systems. These aliens come in the form of plants, animals and microbes that have been introduced into an area from other parts of the world, and have been able to displace indigenous species." Preston and Williams, Working for Water Programme/South Africa 2003

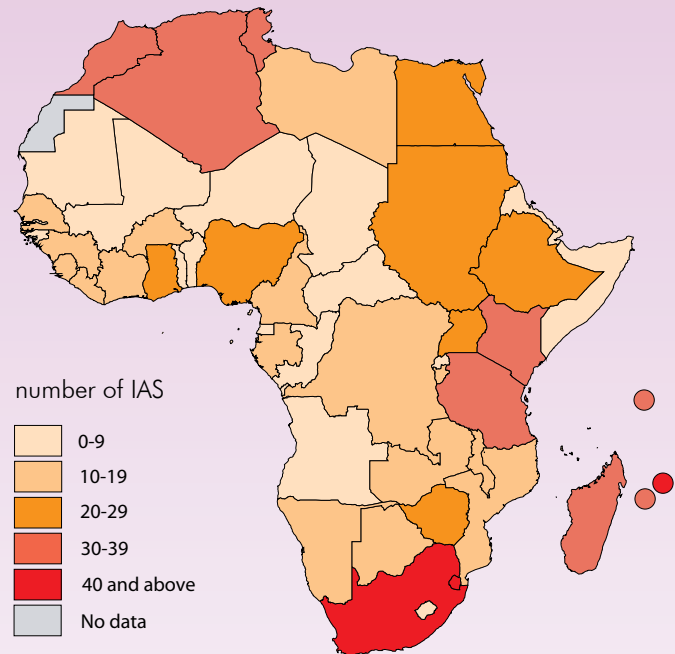
Many alien species, including some that are invasive, have had tremendous economic value for Africa. However, overall through their impact on the sustainability of the resources, on which livelihoods and development are often based, has been adverse: undercutting opportunities, affecting human well-being and contributing to increased human vulnerability. Invasive alien species (IAS) are a serious threat to global, regional and local biodiversity; with implications for freshwater and marine resources and forests and woodlands.

The proliferation of IAS affects the potential of countries to meet their development and environmental objectives because resources spent on trying to control IAS could be redirected to other development initiatives, such as the implementation of the Millennium Development Goals (MDGs). This is an important reason to adopt approaches which control and prevent introductions.

- Invasive alien species occur in all major taxonomic groups, they include viruses, fungi, algae, plants, fish, amphibians, reptiles, birds, and mammals. Numerous species, including as high as ten per cent of the world's 300 000 vascular plants, have the potential to invade other ecosystems.
- Invasive alien species threaten all sub-regions in Africa. The continent is home to hundreds of IAS, both plant and animal. In many parts freshwater ecosystems are particularly at risk, with IAS surpassing habitat loss as the number one cause of biodiversity loss. Virtually all countries in the region are affected by IAS. In 2004 IUCN, the World Conservation Union identified 81 IAS in South Africa, 49 in Mauritius, 44 in Swaziland, 37 in Algeria and Madagascar, 35 in Kenya, 28 in Egypt, 26 in Ghana and Zimbabwe, and 22 in Ethiopia. In some countries there may be underreporting of the incidence of IAS.
- Invasive alien species flourish in areas disturbed by human activities.

- The Millennium Ecosystem Assessment (MA) found that trends in species introductions, as well as modeling predictions, strongly suggest that biological invasions will continue to increase in number and impact.
- Invasive alien species may threaten native species as direct predators or competitors, as vectors of disease, or by modifying the habitat or altering native species dynamics. The threat posed to biodiversity by IAS is considered second only to that of habitat loss. On small islands, it is now comparable with habitat loss as the lead cause of biodiversity loss.

The incidence of IAS in Africa



Source: data from IUCN/SSC/ISSG 2004

- Invasive may out-compete native species, repressing or excluding them and therefore, fundamentally change the ecosystem. They may indirectly transform the structure and species

composition of the ecosystem by changing the way in which nutrients are cycled through the ecosystem. Entire ecosystems may be placed at risk through knock-on effects. Given the critical role biodiversity places in the maintenance of essential ecosystem functions, IAS may cause changes in environmental services, such as flood control and water supply, water assimilation, nutrient recycling, conservation and regeneration of soils. Invasives may also affect native species by introducing pathogens or parasites that cause disease or kill native species.

- Both old and newly established IAS contribute to land degradation through soil erosion and the drawing down of water resources, reducing resources available to people and indigenous plants. Others produce leaf litter which poisons the soil, suppressing the growth of other plants, and in particular that of the under storey.
- Over the last 500 years, IAS have been partly or wholly responsible for the extinction of at least 65 bird species, making this the most common contributory factor in recent losses to the world's avifauna.
- Increased exposure to vector diseases such as malaria, dengue fever, schistosomiasis (Bilharzia) and trypanosomiasis (African sleeping sickness) are associated with large development projects, environmental change such as forest loss, and human settlement. Forest loss, for example, has widened the transmission of some diseases previously restricted to wild animal hosts. Trade has also spread the life-threatening bacteria *Escherichia coli* in meat exports.
- Across Africa IAS in the genus *Striga* have a direct impact on local livelihoods: it affects more than 100 million people and as much as 40 per cent of arable land in the savannahs. The cost of eradicating is reportedly between US\$7-13 000 million annually. These invasives stunt maize plant growth by attacking the roots and sucking nutrients and water and thus in addition to the direct financial costs have implications for food security.

- Invasive alien species cost millions of US dollars annually in terms of lost revenue and expenditure on control measures. While the actual costs of IAS are unknown, it is believed to be substantial. Globally, IUCN estimates the economic costs of IAS to be about US\$400 000 million annually and that IAS threaten the success of current and planned projects, to the value of more than US\$13 000 million.
- Currently, Africa spends an estimated US\$60 million annually on the control of IAS. The African Ministerial Conference on the Environment (AMCEN) plans to raise a further US\$265 million to fund various projects related to IAS in Africa over 3-5 years.

The challenge facing Africa is how to respond – to known IAS and to new introductions of alien species that could potentially become invasive. Although Africa has recognized the problems associated with IAS for several decades a comprehensive approach to IAS is still to be developed.

First, Africa needs to develop systems for evaluating the risks and benefits associated with alien species, and for deciding when to use them and when to prevent their introduction or eradicate them. This entails considering the economic, development, environment and human well-being costs and benefits, and recognizing the close relationship between these sectors.

Second, Africa faces the challenges of how to translate its policy objectives into effective management practice. When species are identified as a threat, appropriate responses may include establishing systems for their eradication, as well as for controlling and monitoring their introduction. When alien species are used, developing early warning and assessment systems as well as effective response systems is essential.

For More Information Please Contact: Nick Nuttall, UNEP Spokesperson, Office of the Executive Director, on Tel: 254 20 623084, Mobile: 41 79 596 5737, e-mail: nick.nuttall@unep.org or Angèle Luh - Sy, Information Officer at the Regional office for Africa on Tel: 254 20 624292, E-mail: angele.luh@unep.org

