Annex III

DRAFT METHODS, TOOLS AND STRATEGIES FOR THE MANAGEMENT OF INVASIVE ALIEN SPECIES AS IT RELATES TO PREVENTION OF POTENTIAL RISKS ARISING FROM CLIMATE CHANGE AND ASSOCIATED NATURAL DISASTERS AND LAND USE CHANGES

(PROVISIONAL ADVICE PURSUANT TO DECISION 14/11, ANNEX II, PARAGRAPH 1 (C))

1. The interactions of climate change, associated changes in land and marine ecosystems and biological invasions will have profound consequences for biodiversity. These interactions are considered and potential responses enumerated in CBD/AHTEG/IAS/2019/1/2.

2. Climate change is aiding increased rates (and risk of) spread of many alien species. Human adaptations to climate change will alter land-use and increase disturbances in the ecosystem that, in turn, facilitate the establishment of alien species.

3. Not all invasive alien species incursions are successful, nor will all invasive alien species benefit from climate change, as some may become less abundant under particular changing climates. Some invasive alien species will decline in importance while some currently low impact alien species may become significant invasive alien species.

4. Climate change may exacerbate existing problems and impacts of invasive alien species, with both direct and indirect impacts on biodiversity and socioeconomic values. Changing ocean currents will have huge impacts on species movements in marine environments as well as influence climatic conditions on land. Loss of permanent sea ice is opening up new sea transport routes and shipping in the Arctic is creating greater probability of invasive alien species introduction and establishment in the Arctic terrestrial and marine environments.

5. Climate change is associated with more frequent extreme weather events like cyclones and flooding. Extreme weather events cannot only transport invasive alien species to new areas, but also cause disturbances in habitats which enable invasive alien species to establish themselves and spread. Climate-induced extreme weather events can also lead to sudden human population movements and displaced people can inadvertently transport invasive alien species.

6 Prevention and management of invasive alien species under climate change becomes an even greater challenge with climate change. New prioritization actions will be required.

7. For more information on tools that support management of invasive alien species in the face of climate change, see the synthesis report of the Online Forum.[1]

A. Prediction

8. Managing the impacts of invasive alien species on biodiversity and ecosystem services requires knowledge of the manner in which the actual and potential impact will vary as a result of climate change so that management priorities can be adapted accordingly.

9. States, organizations and relevant stakeholders, taking into account, among other things, decision 14/5, are strongly encouraged:

(a) To undertake horizon scanning to forecast/predict future changes in actual and potential risks and impacts of invasive alien species arising from climate change;

(b) To identify changes in invasive alien species pathway risks arising from climate change. Climatically similar regions posing the greatest current mutual risks today are likely to change in the future along with changes in vectors and pathways, including changes in trade and the movement of people between these regions;

[1] (CBD/IAS/AHTEG/2019/1/INF/1).

(c) To prioritize invasive alien species on the basis of potential direct and indirect impacts in the context of climate change;

(d) To identify effects of climate change on new potential invasive alien species introductions or pathways of introductions and establishment into pristine and invaded communities;

(e) To determine and prioritize for action sites at the greatest risk from climate change and invasive alien species;

(f) To prioritize efforts to maintain ecosystem goods and services, as well as ecosystem structures and functions on sites at the greatest risk from climate change and invasive alien species;

(g) To apply climate models to understand the impacts of invasive alien species on biodiversity and ecosystem services arising from climate change, and to further develop models for use on a broad scale by developing countries;

(h) To develop better methods to integrate (i) climate change models, (ii) land-use scenarios and (iii) trends in trade with invasive alien species data analysis to improve prediction capability;

(i) To define scenarios to understand where invasive alien species may indirectly increase the impacts of climate change on biodiversity and ecosystem services by transforming ecosystems;

(j) To modify/fine-tune invasive alien species risk analysis, and identify potential alien invasive species[2] (including disease vectors) that remain only casual under current conditions without significant impact and are likely to become established and/or invasive and have an increased impact due to rapid population growth as a result of climate change;

(k) To identify and study potential future invasive alien species that can establish and spread and have an increased impact as a result of climate change. This can be done by using such approaches as sentinel sites to monitor changes in abundance, spread and impacts of such species or by carrying out trait- and impact-based risk assessments;

(l) To identify invasive alien species that are likely to benefit under increased CO_2 levels, rising temperatures, increased frequency of extreme events, fire regimes of increased frequency and intensity, high salt-water incursions, changes in ocean currents and changes in precipitation patterns, and prioritize management to prevent their spread and impacts, including humane methods of eradication and control;

(m) To improve knowledge of the risks of invasive alien species adapting to new environmental conditions, including rapid evolution and hybridization;

(n) To identify impacts of invasive alien species arising from climate change on biodiversity and ecosystem services;

(o) To ensure the meaningful participation of indigenous peoples and local communities, use of their biocultural indicators, early identification and warning systems and traditional knowledge in the development of predictions of invasive alien species under climate change with their “free, prior and informed consent” or “free, prior informed consent” or “approval and involvement”, depending on national circumstances.

[2] Sleeper alien species: alien species whose population persistence is limited by the current climate and which are expected to exhibit greater rates of establishment as a result of climate change.

B. Planning and prevention

10. States are encouraged, in collaboration with experts, subnational government, indigenous peoples, local communities and relevant stakeholders:

(a) To develop climate change relevant risk analysis for prioritizing invasive alien species for management (e.g. fire-enhancing weeds);

(b) To develop and implement management strategies to eradicate, contain or control high ranking potential alien species and introduced or established invasive alien species before they can respond to climate change. Those strategies should be object of an appropriate risk analysis, in order to avoid unnecessary biosafety concerns;

(c) To monitor the spread and impact of all established and potential alien species, particularly in sites or regions where biodiversity and ecosystem services are likely to deteriorate rapidly under climate change. Best-practice approaches using, for example, remote sensing or sensor networks are suggested to be undertaken;

(d) To minimize the potential of biological invasions or develop spatial response planning for areas in which communities are threatened with a high risk of extreme weather events (e.g, relocate zoos, botanical gardens, exotic aquaculture facilities from extreme-event-prone areas);

(e) To adapt current pathway management with a view to reducing changes in risks arising from climate, including predicted associated changes in trade and movement of people;

(f) To engage all sectors, including agriculture and public health agencies and industries, in invasive alien species planning activities where climate change risks are cross-sectoral;

(g) To raise public awareness of changing invasive alien species threats arising from climate change and include the participation of the public and all relevant sectors in response planning;

(h) To collect best practices of indigenous peoples and local communities on the monitoring, controlling and mitigation of the impacts of invasive alien species caused by climate change;

(i) To engage with regional and local specialists when considering prevention, planning and mitigation measures.

C. Management

11. It is suggested that States take the following actions:

(a) Apply adaptive management approaches to future prioritized management actions in the context of climate change and share the information with other Parties to improve outcomes;

(b) Take steps to increase the long-term functional resilience of threatened ecosystems and habitats to climate change, extreme weather events and natural disasters and associated invasive alien species incursions, particularly for islands and coastal systems, taking into account guidance in decision 14/5, paragraphs 3(h), 4(b) and annex, as well as decision X/33, paragraph 8(n);

(c) Undertake focused management actions, including containment, eradication when possible or control of invasive alien species in areas that could act as non-native sources for spread into identified vulnerable areas and/or native communities;

(d) Collate existing knowledge into international online databases to allow the interoperable collection and dissemination of data and knowledge on the effectiveness of actions to mitigate impacts of invasive alien species arising from climate change. An example of such a database is the Database of Island Invasive Species Eradications (DIISE);[3]

[3] http://diise.islandconservation.org.

(e) Develop and integrate invasive alien species management strategies into "threatened climate vulnerable species movement-assisted translocation actions" to avoid unintended consequences, taking into account decision X/33, paragraph 8(e);

(f) Collect best practices of indigenous peoples and local communities on the monitoring, control and mitigation of the impacts of invasive alien species, diseases and shifting species distributions caused by climate change.

D. National and international cooperation

12. States and relevant international organizations are strongly urged to integrate pathway and invasive alien species risk based multi-criteria prioritization approaches into all levels of planning to obtain multiple benefits and shared outcomes, including the following:

(a) National and international climate mitigation and adaptation strategies, environmental impact assessments, and response planning activities in accordance with decision X/33, paragraph 8(p);

(b) Other relevant conventions (e.g. United Nations Framework Convention on Climate Change, Convention on the Conservation of Migratory Species of Wild Animals) and providing relevant United Nations implementing agencies with policy guidance;

(c) National and international commitments and actions under the Sustainable Development Goals;

(d) Market incentive programmes and other actions funded by multilateral agencies or forums, such as the Global Environment Facility, the Clean Development Mechanism and the Green Climate Fund.

13. It is suggested that relevant international organizations organize training for governmental and non-governmental development assistance agencies and operatives engaged in disaster relief, identify risks of introducing and spread of invasive alien species with their activities and undertake rapid response with appropriate measures, such as quarantine of equipment and goods, emergency response, eradication, containment and control.