

USE OF GENETIC MATERIAL

OBJECTIVE

Use of seeds, germplasm, and other genetic material from a wide geographic range.

DESCRIPTION

Using seed zones that change over time and are based on regional analyses of climate change data may provide better seed sources than static seed zones. This approach may entail importing from a nearby zone seedlings that are better adapted to current or future climatological conditions. It is also important to take the necessary precautions to avoid introducing a new invasive species.

The principal approaches could be: using mapping programs to match seeds collected from a known origin to planting sites based on climatic information; identifying and communicating needs for new or different genetic material to seed suppliers or nurseries; planting seedlings germinated from seeds collected from various locations throughout a species' native range.

EXPECTED RESULTS

Genetic diversity enhanced.

RESULT INDICATORS

Plant and animal species protected

INVOLVED ACTORS

Policy makers, natural experts, communities.

EXPECTED TIMELINE FOR ACTION

- Long term (> 10 years)

BEST PRACTICES

- Lebanon and Morocco
- Latin America
- Manhattan - USA
- Brazil
- Africa, Asia and USA

CRITICALITIES

Ecoregional and political boundaries may restrict the distance from which new species or genotypes may be imported. Cold tolerance by seedlings.

SCOPE OF THE ACTION

- Adaptation

TYPE OF PROPOSED ACTIONS

- Green
- Soft

SECTOR OF ACTION

- Agriculture / Forests / Land use
- Biodiversity / Conservation of ecosystems

CLIMATE IMPACTS

- Change or loss of biodiversity
- Drought
- Extreme precipitation
- Extreme temperatures
- Fires
- Floods
- Salinization and acidification of water
- Strong winds
- Other

IMPLEMENTATION SCALE

- Region / Country

SOURCE

<https://www.nrs.fs.fed.us/pubs/42179>

<https://www.fs.usda.gov/ccrc/approach/use-seeds-germplasm-and-other-genetic-material-across-greater-geographic-range>

https://www.biodiversityinternational.org/fileadmin/_migrated/uploads/tx_news/A_guide_to_effective_management_of_germplasm_collections_899.pdf