


Alien Species

Please provide the following details on the origin of this report

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Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report

The thematic report on alien species has been prepared basing on the available information from the current assessment of the First National Report on Biological Diversity, National Strategy and Action Plan on Biological Diversity Conservation and the Second National Report on Biodiversity in the Republic of Moldova. Also, the information from monographs, collections of scientific works, reports submitted to the relevant conferences was used to compile this thematic report. The collaborators of the State University of Moldova brought an important contribution to the elaboration of this report. The databases held by the scientific and educational institutions (National Herbarium of the Institute of Botany and collections of the Institute of Zoology under the Academy of Sciences of Moldova and State University of Moldova) served as source of information for the elaboration of the thematic report, which shows the real state of the adventitious species and their impact on spontaneous flora and fauna of the Republic of Moldova and undertaken measures to reduce the impact of alien species in Moldova. Close contacts have been established with various state organizations and NGOs in the process of preparing this report. The following are the state bodies which participated in the elaboration of this thematic report: Institute of Botany under the Academy of Sciences of Moldova (ASM), Institute of Zoology set up under ASM, State University of Moldova and State Agrarian University. The Society of Zoologists of Moldova, the Society of Botanists of Moldova, NGO “Biodiversity Protection” and “Ecospectru” represent the group of non-governmental organizations which took part in the elaboration of the report. A cooperation has been established with the scientists from academic institutions, National Scientific Council for Biodiversity Conservation and experts from the General Division on Protected Areas and Biodiversity of the Ministry of Ecology, Construction and Territorial Development.

Article 8h Alien species

1. What is the relative priority afforded to implementation of this Article and the associated decisions by your country?							
a) High		b) Medium	X	c) Low			
2. To what extent are the resources available adequate for meeting the obligations and recommendations made?							
a) Good		b) Adequate		c) Limiting	X	d) Severely limiting	
3. Has your country identified alien species introduced?							
a) no							
b) only major species of concern						X	
c) a comprehensive system tracks introductions							
4. Has your country developed national policies for addressing issues related to alien invasive species?							
a) no							
b) yes – as part of a national biodiversity strategy (please give details below)						X	
c) yes – as a separate strategy (please give details below)							
5. Has your country assessed the risks posed to ecosystems, habitats or species by the introduction of these alien species?							
a) no							
b) only some alien species of concern have been assessed						X	
c) most alien species have been assessed							
6. Has your country undertaken measures to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species?							
a) no measures							
b) some measures in place						X	
c) potential measures under review							
d) comprehensive measures in place							

Decision IV/1 Report and recommendations of the third meeting of SBSTTA

7. Is your country collaborating in the development of projects at national, regional, sub-regional and international levels to address the issue of alien species?	
a) little or no action	X
b) discussion on potential projects under way	
c) active development of new projects	

8. Does your national strategy and action plan address the issue of alien species?	
a) no	
b) yes – limited extent	X
c) yes – significant extent	

Case-studies

9. Has your country submitted case-studies on the prevention of introduction, control, and eradication of alien species that threaten ecosystems, habitats or species, in response to the call by the fourth meeting of SBSTTA?	
a) no – please indicate below whether this is due to a lack of available case-studies or for other reasons	X
b) yes – please give below any views you may have on the usefulness of the preparation of case-studies for developing a better biological understanding of the problem and/or better management responses.	
10. How many case-studies are available that could be used to gain a better understanding of the issues surrounding alien species in your country?	
a) none	
b) 1-2 – limited understanding	X
c) >2 – significant information available	

Transboundary issues

11. Are known alien invasive species in your country also a problem in neighbouring or biogeographically-similar countries?	
a) not known	
b) none	
c) a few – but in general alien invasive species problems are specific	
d) more than a few - in general we share common problems with other countries	X
12. Is your country collaborating in the development of policies and programmes at regional, sub-regional or international levels to harmonize measures for prevention and control of alien invasive species?	
a) little or no action	X
b) discussion on potential collaboration underway	
c) development of collaborative approaches for a limited number of species	

d) consistent approach and strategy used for all common problems

Further comments

The visible increase of anthropic pressing upon flora species in the Republic of Moldova has provoked essential changes in the structure of the vegetal cover. The invasion of synanthropic species into degraded natural species stop the processes of restoring the natural biocenoses and affects their functioning.

The synanthropic flora consists of three main groups: ruderal, segetal and adventitious. Their species diversity consists of about 460 species, which form 43 communities from *Festuceta*, *Brometa*, *Secalineta* and *Chenopodieta* classes. The weeds with aggressive nature constitute 114 species, of which 11 quarantine species. The representatives of these species damage mostly natural ecosystems of degraded pastures and agricultural ecosystems. *Acer negundo* represents a considerable danger to forest ecosystems.

3b. The inventory of invasive adventitious species is carried out annually. The methods of reproduction, migration ways, progression and regression of species spreading areas are investigated. Once a new species appeared, it is included into a special list by pointing out the time of penetration and place of growing. When a species disappeared, it is excluded from this list.

The main adventitious species are the following:

Acer negundo, *Amaranthus albus*, *A. blitoides*, *A. crispus*, *A. cruentus*, *A. deflexus*, *A. hybridus*, *A. hypochondriacus*, *A. lividus*, *A. retroflexus*, *A. powellii*, *A. spinosus*, *Asclepias syriaca*, *Ambrasia artemisiifolia*, *A. trifida*, *Artemisia annua*, *A. argyi*, *A. dracuncululus*, *A. siewersiana*, *A. tounrneforiana*, *Aster salignus*, *Brachyactis ciliata*, *Calendula officinalis*, *Centaurea iberica*, *Chamomilla suaveolens*, *Cyclachaena xanthifolia*, *Erigeron annuus*, *E. Canadensis*, *Galinsoga ciliata*, *G. Parviflora*, *Grindelia squarrosa*, *Helianthus annuus*, *H. Decapetatus*, *H. tuberosus*, *Rudbeckia hirta*, *R. Lacinita*, *Solidago canadensis*, *Xanthum albinum*, *X. brasiliicum*, *X. califonicum*, *X. rupicola*, *X. spinosum*, *X. strumarium*, *Impatiens parviflora*, *Armoracia rusticana*, *Brasica juncea*, *B. Napus*, *Cardaria draba*, *Diplotaxis viminea*, *Erucastrum armoracioides*, *Lepidium sativum*, *Sinapis alba*, *Cannabis ruderalis*, *Atriplex calotheca*, *A. hortensis*, *Chenopodium ambrosioides*, *Kochia scoparia*, *Camelina communis*, *Ipomaea hederacea*, *Ecballium elaterium*, *Echinocystis lobata*, *Sicyos angulatus*, *Cuscuta campestris*, *C. gymnocarpa*, *C. gronovii*, *Euphorbia dentata*, *E. humifusa*, *Elodea canadensis*, *Valisneria spiralis*, *Dracocephalum moldavica*, *Abutilon thophrasti*, *Malva crispa*, *M. moschata*, *Sida spinosa*, *Oxybaphus nyctagineus*, *Orobanche cumana*, *O. Ramosa*, *Peganum harmala*, *Phytolaca americana*, *Apera interrupta*, *Avena sterilis*, *Cenchrus pauciflorus*, *Echinochloa frumentacea*, *Horedeum jubatum*, *Lolium temulentum*, *Panicum capillare*, *P. milliaceum*, *Phlaris canariensis*, *Setaria decipiens*, *S. italica*, *S. pycnocomma*, *Sorghum halepense*, *Fagopyrum tataricum*, *Adonis annua*, *Datura stramonim*, *Hyoscyamus albus*, *H. niger*, *Lycium barbatum*, *Physalis ixocarpa*, *Solanum cornutum*, *S. luteum*, *Zygophyllum fabago*.

The invasive species of fauna are represented by *Cervus nippon*, *Dama dama*, *Nyctereutes procyonoides*, *Canis aureus*, *Ondatra zibethica*, *Phasianus colchicus*, *Ctenopharyngodon*

idella, *Mylopharyngodon piceus*, *Hypophthalmichthys molitrix*, *Aristichthys nobilis* and *Ictalurus punctatus*.

4b. The Biological Diversity Conservation Strategy and Action Plan were elaborated in 2001, where the current state of biodiversity is reviewed. The agricultural, urban and ruderal ecosystems are characterized. The chapter “*Alien Invasive Species*” highlights 114 plant species.

5b. Large researches on the history, biology and ways of spreading of some adventitious species, such as *Grindelia squarrosa*, *Amaranthus spinosus*, *Cenchrus pauciflorus*, *Euphorbia dentata* etc. have been carried out.

6b. The spreading of abusive adventitious quarantine species is determined to a certain extent by the quarantine bodies. These bodies also undertake measures on neutralizing these species concentration and their further spreading. These type of measures were undertaken lately for *Euphorbia dentata*, *Cenchrus pauciflorus*, *Acer negundo* species.

7a. Reports on alien invasive species of flora and fauna are submitted both to the local and international conferences.

9a. Thematic researches on the prevention of the introduction or regulation and annihilation of the adventitious invasive species, which threat natural ecosystems, have not been undertaken. Such researches could be carried out at the Institute of Botany, Institute of Zoology, Moldova State University and Agrarian State University.

10b. At present there is a medium-size volume of information on the adventitious invasive species.

The main scientific works are:

1. Мырза М., Кухарская Л., Гочу Д. Поширения *Grindelia squarrosa* (Pursch.) Dun. На територии Молдавии // Украинський Ботанічний журнал – 1987. – Т.44. №.6. с.42-44.
2. Мырза М., Кухарская Л. Особенности распространения некоторых адвентивных растений Молдавии // Межвузовский сборник “Вопросы биологии и охраны природы” – Кишинёв: Штиинца, 1988, с.60-68.
3. Мырза М., Кухарская Л. Новый для Молдавии адвентивный сорняк. Сельское хозяйство Молдавии, № 8, Кишинёв, 1988, с. 23.
4. Кухарская Л., Мырза М. *Conchus pauciflorus* Benth. – Новое в Молдавии адвентивное растение // Флора и растительность. – Выпуск 5. - Кишинёв: Штиинца, 1988, с.112-115.
5. Мырза М., Кухарская Л. Адвентивные растения агрофитоценозов некоторых районов Молдавии. Проблема изучения адвентивной флоры СССР. Матералы Совщ. 13 февраля 1989 с. 74-76.
6. Мырза М. О некоторых редких и адвентивных растениях Молдавии // Ботанических журнал – Т.76. - №.1. – 1991, с.129-134.
7. G. Dihoru, M. Mîrza *Artemisio annuae* – *Ivaetum xanthifoliae*. *Ocotirea*, reproducerea și

utilizarea plantelor (Conf. Științifică a botaniștilor). Chișinău, 1994, p. 14-15.

8. M. V. Mîrza Atlas florae Europaeae (Distribution of vascular plants. Cruciferae (Sysymbrium-Aubrieta)) vol. 10 Helsinki, 1994, 224 p.

9. M. V. Mîrza Atlas florae Europaeae (Distribution of vascular plants. Cruciferae (Ricotia-Raphanus)) Helsinki, 1996, vol. 11, p. 309.

10. M. V. Mîrza Atlas florae Europaeae (Distribution of vascular plants in Europaeae (Resedaceae - Plantaginaceae) vol. 12, Helsinki, 1999, 250 p.

Т.С. Гейдеман. Определитель высших растений ССР. Кишинев, Штиинца, 1986

11d. These issues occur all over the world. An intensive synthropization of flora and fauna has happened recently. Large researches are carried out for identifying species invasion, migration ways, agents that perform the migration and inclusion of these species into vegetal and faunistic nature groups. For example, *Grindelia squarrosa* penetrated on the territory of the Ukraine in the 50s, in Moldova in the 70s and in Romania in the 90s.

The national policy on alien invasive species lacks in the Republic of Moldova. The potential risk for the natural ecosystems, habitats and autochthonous species is not assessed while introducing alien species.