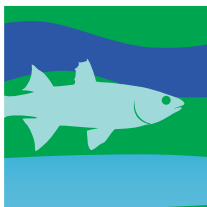
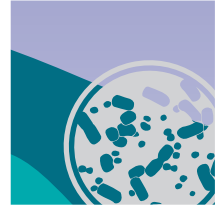


COUNTRY REPORTS



THE STATE OF **GEORGIA'S**
BIODIVERSITY FOR FOOD AND
AGRICULTURE

This country report has been prepared by the national authorities as a contribution to the FAO publication, *The State of the World's Biodiversity for Food and Agriculture*. The report is being made available by the Food and Agriculture Organization of the United Nations (FAO) as requested by the Commission on Genetic Resources for Food and Agriculture. The information in this report has not been verified by FAO, and the content of this document is entirely the responsibility of the authors, and does not necessarily represent the views of FAO, or its Members. The designations employed and the presentation of material do not imply the expression of any opinion whatsoever on the part of FAO concerning legal or development status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed by FAO in preference to others of a similar nature that are not mentioned.

Guidelines for countries to provide a brief report on the state of their biodiversity for food and agriculture

Prepared by the Secretariat of the FAO Commission on Genetic Resources for Food and Agriculture

Introduction

The present guidelines are intended to assist countries that have not submitted a Country Report for *The State of the World's Biodiversity for Food and Agriculture* to prepare a brief report, capturing the major issues and findings on the state of their biodiversity for food and agriculture. The brief reports will be used at the informal regional consultations where countries will come together to discuss and define the regional needs and priorities for the conservation and sustainable use of biodiversity for food and agriculture.

The brief report is not meant to replace the Country Report which should follow the guidelines for the preparation of Country Reports (country report guidelines¹). It should, however, provide a solid basis for the preparation of such a Country Report. Countries that have not yet prepared a Country Report are requested to prepare the brief report for the informal regional consultations, and to make use of its information in the preparation of their Country Report.

Context

Conservation and sustainable management of biodiversity for food and agriculture require a comprehensive understanding of the state and use of its components. Biodiversity for food and agriculture includes the variety and variability of animals, plants and micro-organisms at the genetic, species and ecosystem levels that sustain the structure, functions and processes of agricultural, pastoral, forest and aquatic production systems. This diversity has been managed or influenced by farmers, livestock keepers, forest dwellers and fisher folk for hundreds of generations and reflects the diversity of both human activities and natural processes.

In 2007, the Commission on Genetic Resources for Food and Agriculture (the Commission)² requested FAO to prepare the first report on *The State of the World's Biodiversity for Food and Agriculture* (Report). The presentation of a draft of the Report is foreseen for the Commission's Sixteenth Regular Session in the beginning of 2017.³

At its Fourteenth Regular Session, the Commission invited countries to participate in the process by preparing Country Reports on the state of their national biodiversity for food and agriculture.⁴ To assist countries in this task, FAO developed guidelines for the preparation of Country Reports (country report

¹See <http://www.fao.org/nr/cgrfa/biodiversity/guidelines/en/>.

²The FAO Commission on Genetic Resources for Food and Agriculture is the only intergovernmental forum that specifically develops policies for the sustainable use and conservation of genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use. As of 1 December 2015, 178 countries are member of the Commission.

³CGRFA-11/07/Report, Appendix E.

⁴CGRFA-14/13/Report, paragraph 14.

guidelines).⁵Building on previous global assessments prepared under the aegis of the Commission, the Report will focus on the interactions between sectors (plant, animal, forest and aquatic genetic resources) and on cross-sectoral matters. It will also provide baseline information on the state of associated biodiversity⁶and the ecosystem services they provide (please consult Appendix 1 for the scope of the Report).

Informal regional consultations

In accordance with a request of the Commission,⁷ a series of informal regional consultations will be held in 2016 as part of the preparation of the Report with National Focal Points appointed by countries. The objective of the informal consultations is to discuss needs and priorities for the conservation and sustainable use of biodiversity for food and agriculture in the region. To support discussions at the regional consultations, countries that have not submitted a Country Report are invited to use the present guidelines to prepare a brief report on the state of their biodiversity for food and agriculture.

Recommended approach for preparing a brief report on the state of the country's biodiversity for food and agriculture

Given the cross-sectoral nature of the brief report, National Focal Points are encouraged to involve as many representative stakeholders as practical, including government, research and civil society representatives from different sectors (fisheries and aquaculture, forest, livestock and plants) and those able to support analysis of associated biodiversity.

The National Focal Point is invited to submit the brief report to the Secretariat of the Commission by email at: SOW-BFA@fao.org in English, French or Spanish. To ensure the brief reports are taken into consideration during the discussions at the respective informal regional consultations, countries are requested to submit them **no later than 31 January 2016**.

To assist countries with the preparation of the brief report, the guidance presented below is organized around the following four priority areas of biodiversity for food and agriculture:

- I. Assessment and monitoring
- II. Conservation and sustainable use
- III. Policies, institutions and capacity
- IV. Regional and international cooperation

Countries are invited to provide information on the above mentioned priority areas, to identify areas where information is missing and to focus on their needs and priorities.⁸

⁵See <http://www.fao.org/nr/cgrfa/biodiversity/guidelines/en/>.

⁶Associated biodiversity includes a range of organisms that are found in and around production systems, above and below ground, and that have a functional role in the ecosystem, for example through pollination, soil formation, water provision, etc. For a more detailed definition, see Annex 1 of the country report guidelines.

⁷CGRFA-15/15/Report, paragraph 13.

⁸The Commission acknowledged that the Report's findings would be preliminary and incomplete in a number of areas and requested FAO to ensure that such information gaps would be assessed and highlighted in the report (CGRFA-14/13/Report, paragraph 15).

Proposed contents of the brief report

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STATE OF KNOWLEDGE OF BIODIVERSITY FOR FOOD AND AGRICULTURE IN GEORGIA, THE SOUTH CAUCASUS

Please consult referenced sections of the country report guidelines⁹ for additional information, descriptions and definitions.

I. Assessment and monitoring of biodiversity for food and agriculture

1.1 General context¹⁰

- a) Provide a brief account on the role of biodiversity for food and agriculture in your country.¹¹

Georgia is a small country of the South Caucasus, located between latitudes 41° and 44° N, and longitudes 40° and 47° E, having 69,700 sq km of area and 4.3 million population living with density of 53.5/km². The capital is Tbilisi with 1.2 Million of habitants.

The Greater Caucasus Mountain Range forms the northern border of Georgia. The southern portion of the country is bounded by the Lesser Caucasus Mountains. The Greater Caucasus Mountain Range is much higher in elevation than the Lesser Caucasus Mountains, with the highest peaks rising more than 5,000 meters above sea level.

The landscape within the nation's boundaries is quite varied. Western Georgia's landscape ranges from low-land marsh-forests, swamps, and temperate rainforests to eternal snows and glaciers, while the eastern part of the country even contains a small segment of semi-arid plains. Forests cover around 40% of Georgia's territory while the alpine/subalpine zone accounts for roughly around 10 percent of the land.

Much of the natural habitat in the low-lying areas of western Georgia has disappeared during the past 100 years because of the agricultural development of the land and urbanization. At present, the forest cover generally remains outside of the low-lying areas and is mainly located along the foothills and the mountains. Western Georgia's forests consist mainly of deciduous trees below 600 meters a.s.l. and contain species such as oak, hornbeam, beech, elm, ash, and chestnut. Ca. 1000 of all 4000 higher plants of Georgia are endemic in this country.

Eastern Georgia's landscape (referring to the territory east of the Likhi Range) is considerably different from that of the west, although, much like the Colchis plain in the west, nearly all of the low-lying areas of eastern Georgia including the Mtkvari and Alazani River plains have been deforested for agricultural purposes. In addition, because of the region's relatively drier climate, some of the low-lying plains (especially in Kartli and south-eastern Kakheti) were never covered by forests in the first place.

The general landscape of eastern Georgia comprises numerous valleys and gorges that are separated by mountains. In contrast with western Georgia, nearly 85 percent of the forests of the region are deciduous. Coniferous forests only dominate in the Borjomi Gorge and in the extreme western areas. Out of the deciduous species of trees, beech, oak, and hornbeam dominate. Other deciduous species include several varieties of maple, aspen, ash, and hazelnut. The Upper Alazani River Valley contains yew forests.

⁹See <http://www.fao.org/nr/cgrfa/biodiversity/guidelines/en/>.

¹⁰Reference: questions 2, 3, 4, 5, 6 and 7 of country report guidelines.

¹¹Reference: question 3 of country report guidelines.

The climate of Georgia is extremely diverse, considering the nation's small size. There are two main climatic zones, roughly corresponding to the eastern and western parts of the country. The Greater Caucasus Mountain Range plays an important role in moderating Georgia's climate and protects the nation from the penetration of colder air masses from the north. The Lesser Caucasus Mountains partially protect the region from the influence of dry and hot air masses from the south.

Much of western Georgia lies within the northern periphery of the humid subtropical zone with annual precipitation ranging from 1,000–4,000 mm. The climate of the region are relatively warm throughout the year, the foothills and mountainous areas (including both the Greater and Lesser Caucasus Mountains) experience cool, wet summers and snowy winters.

Eastern Georgia has a transitional climate from humid subtropical to continental. The region's weather patterns are influenced both by dry Caspian air masses from the east and humid Black Sea air masses from the west. The penetration of humid air masses from the Black Sea is often blocked by mountain ranges (Likhi and Meskheti) that separate the eastern and western parts of the nation. Annual precipitation is considerably less than that of western Georgia and ranges from 400–1,600 mm.

The wettest periods generally occur during spring and autumn, while winter and summer months tend to be the driest. Much of eastern Georgia experiences hot summers (especially in the low-lying areas) and relatively cold winters. As in the western parts of the country, elevation plays an important role in eastern Georgia where climatic conditions above 1,500 meters are considerably colder than in the low-lying areas. The regions that lie above 2,000 meters frequently experience frost even during the summer months.

Up to 40% of Georgia is covered by forests and another 40% by agricultural land.

The total GDP (PPP) estimated was \$35.6 billion and per capita it was \$9,500 in 2015. And total GDP (nominal) estimated was \$14.374 billion and per capita it was \$3,863.

Because of its high landscape diversity and low latitude, Georgia is home for more than 30 000 living organisms except viruses and bacteria. Vertebral animals are 576 species, from which 60 species are endemic to Georgia. It is described more than 16 000 species of invertebrates, the real number of which is actually much higher. In Georgia nearly 4100 species of vascular plants are recorded, including ferns - Pteridophyta 74, Gymnospermae 17, Gymnospermae 17, Angiospermae 4009, Dicotyledoneae-3254, Monocotyledoneae -755. Georgia's flora counts 900 endemic species, including 600 endemic to the Caucasus, 300 to Georgia.

In Georgia more than 730 species of lichens are proliferated, water-plants (Algoflora) in continental waters - 2605 taxons, in the soil – 140 water - plants, but fungi are more than 7000 species.

Georgia's flora also includes a number of endemic genera; 16 genera are considered endemic or sub endemic to the country.

Biodiversity for food and agriculture plays important in our country, while Georgia within the South Caucasus – is located in Asia Minor, which by N. Vavilov's theory of the "Center of origin of cultivated plants" gave origin to 83 species, among which are notable wheats, rye, oats, seed and forage legumes, fruits including grapevine. The same Asia Minor and the Middle East ("The Fertile Crescent") were the centers of domestication for many farm animal species. This are basis for biodiversity for our country for many crops and livestock.

Being a crossroad between Asia and Europe, North and South and having developed agriculture, Georgia every period of its long-centuries agriculture did introduction of various crops as from neighbor regions and well as from American continent after its discovery. Using the autochthonous or century-old introduced crops the Georgian farmers used available germplasm for selection or constructed new varieties, more suitable for our soil – climatic conditions and giving high profit to

economy of our country. Since the beginning of XX century breeding of new varieties became one of the main activities for the agricultural research institutions and many successful programs was realized. Local breeding varieties and modern introductive cultivars are the basis for biodiversity of our country today.

As a basis for breeding, activities for conservation of local biodiversity started since the XIX century, it was highly evaluated after N. Vavilov's activities (Georgia was a country of former Soviet Union, were N. Vavilov worked) and stay up today very active.

- b) Indicate which of the production systems listed in Table 1 below are found in your country¹² and briefly describe each of them (e.g. area under production, share of smallholders, importance of the production system to the incomes, livelihoods and well-being of rural communities, etc.).¹³

Table 1. Production systems present in the country.

Production system	Indicate if present in the country (Y/N)	Description ¹³
Livestock grassland-based systems	Y	The main system
Livestock landless systems	N	Only single cases is available
Naturally regenerated forests	Y	The main system for forests (2.250.000 ha)
Planted forests	y	Less spread system (72.000 ha)
Self-recruiting capture fisheries	y	The Black Sea and natural lakes are the components of this kind of fisheries
Culture-based fisheries	y	The natural lakes are the component used
Fed aquaculture	y	The main activities are farming of fishes in artificial or natural lakes
Non-fed aquaculture	y	It is available for fishes
Irrigated crops (rice)	N	-
Irrigated crops (other)	Y	Is mostly available in East part of Georgia for most agricultural crops where waters available
Rainfed crops	Y	Mostly on west part of Georgia or in non-irrigated places of East Georgia, as well as in mountain regions
Mixed systems (livestock, crop, forest and/or aquatic and fisheries)	Y	Almost all kind of mixed systems is available in the country
Others (please specify)		

[Insert rows as needed]

1.2. State, trends and drivers of change of biodiversity for food and agriculture

¹²Reference: questions 4 and 5 of country report guidelines. For the purpose of this table, aggregated production systems are used (disregarding climatic zones).

¹³Reference: questions 5 and 7 (Table 3) of country report guidelines and FAOSTAT: <http://faostat3.fao.org/home/E>

- a) Describe the main features of the state and trends¹⁴of and the main drivers of change¹⁵ affecting plant, animal, forest and aquatic genetic resources in the country’s production systems as identified in Table 1.
- b) Indicate whether the country has any national information system in place on associated biodiversity and identify the most frequently monitored components of associated biodiversity.¹⁶
- c) List associated biodiversity species that are actively managed in production systems for the provision of ecosystem services in Table 2.

Table 2.List of associated biodiversity species that are actively managed in production systems for the provision of ecosystem services.¹⁷

Yeasts- Saccharomyces:

Sacharomyceswini,
 Saccharomyces oviformis,
 Saccharomyces cerevisiae,
 Saccharomyces uvarum

Pest insects of plants:

Hipanthriacunea Drury,
Lymantriadispar L.,
*Dendroctonusmicans*Kugel.,
*Ipstypographus*L.
 Box Tree Moth - *Cydalima perspectalis*

Plant diseases:

Box-burn *Cylindrocladium buxicola*,
 Chestnut cancer - *Cryphonectria parasitica*,
Dothistroma spp,
Armillaria sp.
Ophiostoma ulmi

Anthophyllites – spray-type of flowering plants (Apis spp.)

Mikorizis fungi

Associated biodiversity species	Ecosystem functions and services provided by the species in the production system
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¹⁴Reference: (i) the First and Second Reports on the *State of the World’s Plant Genetic Resources for Food and Agriculture*; the First and Second Reports on the *State of the World’s Animal Genetic Resources for Food and Agriculture*; and *The State of the World’s Forest Genetic Resources*; and (ii) questions 3, 11, and 20 of country report guidelines.

¹⁵Reference: (i) the First and Second Reports on the *State of the World’s Plant Genetic Resources for Food and Agriculture*; the First and Second Reports on the *State of the World’s Animal Genetic Resources for Food and Agriculture*; and *The State of the World’s Forest Genetic Resources*; (ii) Annex 3 of the country report guidelines includes a list of drivers of change and descriptions; and (iii) questions 44, 45 and 55 of country report guidelines.

¹⁶Reference: questions 28 and 75 of country report guidelines.

¹⁷Reference: question 27 of country report guidelines.

Species 1	
Species2	

[Insert rows as needed]

- d) Provide in Table 3 a list of wild food species known to be harvested, hunted, captured or gathered for food in your country. Indicate the change in state of the species over the last 10 years (strongly increasing (2), increasing (1), stable (0), decreasing (-1), or strongly decreasing (-2), or not known (NK)).

Table 3. Wild food species used for food in the country.¹⁸

Wild food species	Change in state (2,1,0,-1,-2, NK)
Species 1	
Species2	
<i>Castanea sativa</i> L.	2
<i>Mespilus germanica</i> L.	2
<i>Cornus mas</i> L.	1
<i>Rosa canina</i> L.	2
<i>Rubus idaeus</i>	2
<i>Prunus cerasifera</i>	0
<i>Malus orientalis</i> Uglitz	2
<i>Prunus spinosa</i>	-1
<i>Hippophae rhamnoides</i>	2
<i>Pyrus caucasica</i> Fed.	0
<i>Rubus</i> ssp.	0
<i>Staphylea pinnata</i> L.	0
<i>Smilax excelsa</i> L.	1
<i>Vaccinium</i> ssp.	2
<i>Diospyros lotus</i> L.	-2
<i>Barbarea</i> ssp.	0
<i>Asparagus officinalis</i> L.	0
<i>Allium ursinum</i>	-1
Mushrooms	-1
Fish of rivers	0
Fish of lakes	0
Fish of Black Sea	1
<i>Coturnix coturnix</i>	-2
Anatidae family	-2
Wild boar	1

[Insert rows as needed]

¹⁸Reference: question 34 of country report guidelines.

- e) If available, provide information on the proportion of the population in your country that uses wild food on a regular basis for food and nutrition.¹⁹
About 10-15% of population use wild food on a regular basis for food and nutrition. This are mostly marine fishes. But In case of use that are not the basic product, but can be recognized as additional component of the diet. Difference between gender bases is not available.
- f) Briefly summarize the state and trends²⁰of and the drivers of change²¹affecting:
- Associated biodiversity²²: micro-organisms, invertebrates, vertebrates, plants
 - Ecosystem services²³: regulating, supporting–Incoherent legal base has a negative impact;
 - Wild food resources²⁴ - Illegal, unsustainable use (international norms of the abstraction of resources is not protected).

BOX 1. Describe one or two examples of countermeasures that have been taken in the country to reduce adverse effects of drivers on associated biodiversity, ecosystem services and/or wild foods.²⁵

1.3 Needs and priorities

- a) Identify the country’s main needs and priorities in terms of the state of biodiversity for food and agriculture, and in particular of associated biodiversity, wild foods and ecosystem services.²⁶

II. Sustainable use and conservation of biodiversity for food and agriculture

2.1 Sustainable use

- a) List in Table 4 management and diversity based practices that support the maintenance and use of biodiversity for food and agriculture in production systems.

Table 4.Management²⁷ and diversity based²⁸ practices that support the maintenance and use of biodiversity for food and agriculture in production systems.

Production system	Management/ diversity based practice ²⁹	Trends in the application of the practice over the past ten years
Livestock		
Forests	Plantation of the new seedlings: 1. In the Guria region (Lanchkhuti	1. Nursery of red list species

¹⁹Reference: question 59 of country report guidelines.

²⁰Reference: questions 21, 22, 23, 24, 29, 34 and 35 of country report guidelines.

²¹Reference: Annex 3 and questions 9, 10, 12, 14, 44, 45 and 55 of country report guidelines.

²²Annex 1 of the country report guidelines provides a definition of associated biodiversity.

²³Annex 4 of the country report guidelines provides a definition of ecosystem services.

²⁴Reference: question 34 of country report guidelines.

²⁵Reference: question 19 of country report guidelines.

²⁶Reference: questions 28, 48 and 49 of country report guidelines.

²⁷ Annex 5 of the country report guidelines describes a list of management practices supporting the use and conservation of biodiversity for food and agriculture.

²⁸Annex 6 of the country report guidelines describes a list of diversity based interventions supporting the use and conservation of biodiversity for food and agriculture.

²⁹Reference: questions 52, 53 and 56 of country report guidelines.

	<p>Forest District, Forestry Supsa) 0,5 ha</p> <p>2. In the Imereti Region – Forest District of Tskaltubo, Tskhunkuri Forestry, 0,4 ha</p> <p>3. Mtskheta – Mtianeti – Barisakho Forest District, Forestry Choporti 0.3 ha</p> <p>4. Samtskhe –Javakheti – Bakuriani Forest District, Tsikhijvari Forestry, 0.2 ha</p> <p>Since 2013 rehabilitation works are being conducted intensively on the 250 ha hectares burned during the war in the Borjomi region.</p>	<p>2. Oak (<i>Quercusimeretina</i>) nursery in Imereti</p> <p>3. Juniper, Pine, Maple, Georgian oak</p> <p>4. Caucasian pine nursery</p> <p>Restored 80 hectares of land</p>
Aquaculture and Fisheries		
Crops		
Mixed		

[Insert rows as needed]

BOX 2. Describe a successful programme or project that has been undertaken in the country to support one of the practices listed in Table 4.³⁰

BOX 2. The rehabilitation of burned Borjomi forests

The measures of the forest restoration were carried out with the help of the United Nations and the Government of Austria, as well as with the Budgetary Funds of the National Forestry Agency.

At present 80, 6 ha hectares are restored, the characteristic species for this territory are planted (fir-tree, silver-fir, pine, ash, maples etc.). The result is perfect (due to difficult conditions – the inclination of the slope, climate) and amounts to 75%. Totally 182000 seedlings are planted. The caring measures are continued taking into consideration the saturation and duration of the project.

It should be noted that on the specific territory in 2015 the temporary forest nursery was arranged with the complicity, in which Tsaghveri school pupils were involved, they participated in the arrangement of the nursery and the theoretical study was provided for them at first for school nursery and according to school guidelines, then they carried out practical activities (arrangement of researches, sowing, caring). Their participation in planting is planned in spring, which will be carried out on the plateau, on the sanitary cutting area with their own nurtured planting materials.

In 2017 - 40 hectares of the land restoration is provided in this valley and with this the recovery of the

³⁰Reference:question 54 of country report guidelines.

territory will be completed.

- b) Provide examples whereby the diversity *per se*,³¹ or its lack,³² had a direct effect on productivity; food security and nutrition; rural livelihoods; ecosystem services; sustainability; resilience; or sustainable intensification.

Establishment of state service for registration of new agricultural crop varieties in Georgia under the National Intellectual Property Center (“Sakpatenti”), which makes its control for originality, diversity, stability. This can be recognized one way for enlargement of biodiversity for the agricultural crops.

- c) List in Table 5 examples where by the use of biodiversity for food and agriculture contributed to cope with climate change, invasive alien species, and natural or human-made disasters

Table 5. Examples whereby the use of biodiversity for food and agriculture (BFA) contributed to cope with climate change, invasive alien species, and natural or human-made disasters

1. Overgrazing (abundance of sheep, non-systematic use of pastures) leads to the problem of the climate change, to the spread of invasive species.
2. Uncontrolled mangle of forests leads to a local reduction of the biodiversity, as well as replacement of the invasive species: Tree of Heaven (*Ailanthus altissima*), Paulownia spp. (locust – *Robinia pseudoacacia* is considered to be adapted).

Objective	Description
Use of BFA to adapt to and mitigate climate change ³³	Grape (<i>Vitisvinifera</i>)- 525 authothonous varieties can be used for looking for adaptive genes against climate change Georgian forests are distinguished with biodiversity (nearly 400 species of arboretum plants are growing, from this 153 – tree, 202 bushes, 29 – half bush, 11 Liana) which gives a high adaptation.
Use of BFA to manage the spread of/control invasive alien species ³⁴	Most of the invasive plant pests are invasive, natural enemies are used for their control: a parasite or predator insects (Trichogrannaevanescens, Braconhebetor, Podisusmocoliventris Bacterial preparates(Dipel, lepinocid, Bikol and other entobacterini made on the BT bases; Fungal preparates(Boverini, Metarizini etc.); Entemopathological nematodes (nemabact, entornm F).

³¹Reference: question 58 of country report guidelines.

³² Reference: question 57 of country report guidelines.

³³ Reference: question 69 of country report guidelines.

³⁴Reference: question 46 of country report guidelines.

Use of BFA to prevent natural or human-made disasters and/or reduce their effects on livelihoods, food security and nutrition ³⁵	The species that grow well for the utilization of saline soils - Eldar pine - <i>Pinus eldarica</i> , elm - <i>Ulmus minor</i> , Gleditschia- <i>Gleditschia triacanthos</i> , Sophora - <i>Sophora japonica</i> , <i>Robinia pseudoacacia</i> , Genista, Tamarix. The degraded tea plantations are replaced with kiwi and hazelnut, bilberry as well.

- d) List and briefly describe ecosystem/landscape/seascape approaches³⁶ that have improved the management and use of BFA in the country.³⁷
- e) Provide examples of activities undertaken to maintain and use traditional knowledge of associated biodiversity and wild foods.³⁸
Availability of episodic activities for collection of traditional knowledge just for several wild foods like plants, mushrooms, honey plants.
- f) Identify possible needs and priorities in terms of the sustainable use of biodiversity for food and agriculture, and in particular of associated biodiversity and wild foods.
Collection of traditional knowledge available in various regions of Georgia for various wild foods and their publication.

2.2. Conservation

- a) Describe the status of *in situ* conservation of associated biodiversity and wild food species in your country³⁹:
 1. List and describe any existing national *in situ* conservation initiative(s).

Georgia has a long history of establishing Protected Areas dating back to 1912 when the Lagodekhi Strict Nature Reserve was created. Nowadays, protected areas make up to 7% of the country's territory (384 684 ha) and about 75% of protected areas are covered by forests.

³⁵Reference: question 43 of country report guidelines.
³⁶The ecosystem approach concept is generally understood to encompass the management of human activities, based on the best understanding of the ecological interactions and processes, so as to ensure that ecosystems structure and functions are sustained for the benefit of present and future generations. Ecosystem approaches include the Convention on Biological Diversity's Ecosystem Approach, Integrated Land Use Planning, Integrated Water Resource Management, Sustainable Forest Management, Code of Conduct for Responsible Fisheries, Ecosystem approach to fisheries management, etc.
 - A "landscape approach" means taking both a geographical and socio-economic approach to managing the land, water and forest resources that form the foundation – the natural capital – for meeting our goals of food security and inclusive green growth. By taking into account the inter-actions between these core elements of natural capital and the ecosystem services they produce, rather than considering them in isolation from one another, we are better able to maximize productivity, improve livelihoods, and reduce negative environmental impacts.
³⁷Reference: questions 60, 61 and 80 of country report guidelines.
³⁸Reference: questions 32, 33, 38 and 39 of country report guidelines.
³⁹Reference: questions 31 (Table 13) and 37 (Table 17) of country report guidelines.

Georgian Protected Areas include: 14 Strict Nature Reserve, 11 National Parks, 19 Sanctuary, 41 National Monuments and 2 Protected Landscapes.

From 4130 species of plants spread in Georgia, more than 3000 species can be found on the small territories of protected areas, including about 300 the Caucasian and Georgian endemic. Approximately 75% of protected areas are covered by forests, where there are quite extensive coniferous missives and important ecosystems of broad-leaved plants.

90 species of rare and endangered animals live in protected areas, which is 67 % of Georgia's „Red List“.

2. Indicate which species/groups of species are being conserved and with what objective(s).
Babaneuli Strict Nature Reserve was created to protect *Zelkova carpinifolia*. In Batsara Strict Nature Reserve are protected virgin *Taxusbaccata* stands, in Borjomi-Kharagauli National Park are protected rare forest species (*Castanea sativa*) and habitats, among fauna species you can find here red deer (*Cervuselaphus*) and brown bear (*Ursusarctos*) etc. Kintrishi national park was established to protect Colhic flora and fauna. Mariamjvari Strict Nature Reserve was created to protect relict *Pinussosnovskii* L stand. Lagodekhi Protected area is the first protected area of country, which is represented by 2/3 of Georgian species. Pistacia - *Pistaceametica* is protected in Vashlovani reserve.

3. Describe any existing sub-regional/regional *in situ* conservation initiative(s) the country is involved in.

1. Nowadays is carrying out support program for Protected Areas in the Caucasus eco-regional conservation program, phase III) – the donor organization is – The Federal Ministry for Economic Cooperation and Development abbreviated (BMZ)

2. Nature Protection Program - South Caucasus- establishment of Javakheti National Park in Georgia – the donor organization is The Federal Ministry for Economic Cooperation and Development abbreviated (BMZ)

3. Currently is carrying out joint activities in the South Caucasus Countries on the red list of woody species.

4. Even in the last century, gazelle and leopard were considered as animals of symbolic meaning. Currently both species are extinct and nowadays it possible to see gazelles in Vashlovani Protected area reintroduced from Azerbaijan. No less important is the Goat, in particular the species which became extinct from the territory of Borjomi-Kharagauli National Park and only in 2007, it was possible to bring this species from Armenia, on the initiative of the Caucasian office of the World Wildlife Fund (WWF), within the framework of the Goat reproduction project.

b) Describe the status of *ex situ* conservation⁴⁰ of associated biodiversity and wild food species in your country:

1. List and describe any existing national *ex situ* conservation initiative(s).

Plants:

⁴⁰Reference: questions 30 (Table 12) and 36 (Table 16) of country report guidelines.

- Seed bank of red-listed species – V.Gulisahvili Forest Institute
- Seed bank of woody species of South Caucasus – Botanical Institute
- Living collections - in the Jighaura experimental plot, Mtskheta district:
 - Grapevine (*Vitisvinifera* L.): 7 collection of various level and size to protect autochthonous and introduced varieties of grape as well as CWR of grape *V. sylvestris*. The largest collections with about 1000 accessions belongs to the Scientific – Research Center of Agriculture and is located in the village Jighaura, Mtskheta district.
 - Fruit collection (horticultural crops, nearly 300 varieties) belongs to the Scientific – Research Center of Agriculture and is located in the village Jighaura, Mtskheta district.
 - Forest Plant collection of East Georgia
 - Gene bank of cereals, is located at the Agricultural University of Georgia
 - Collection of vegetables, belongs to the Scientific – Research Center of Agriculture and is located in the village Jighaura, Mtskheta district
 - Bees: Successful program is realized to conserve the unique population of Georgian (Caucasus) bee (Megruli, Guruli, Georgian populations, Mukhuri Breeding farm was created in the Scientific-research Center of Agriculture).
 - There are available 6 botanical garden in the Country
 - Animals:

2. Indicate which species/groups of species are being conserved and with what objective(s).

The species and populations are preserved for conservation of biodiversity with various purposes including breeding activities (Georgian, Kakhuri swine, Mountain cattle, Sheep (semi-fatty-tailed, Tushuri) etc.

3. Describe any existing sub-regional/regional *in situ* conservation initiative(s) the country is involved in.

- LEPL Scientific-Research Center of Agriculture (GEO 038) - Construction of Jighaura collection of grapevine (nearly 500 local and 300 foreign varieties) with help of Moldova, Ukraine and France return Georgian native varieties from these countries back to Georgia - GEO 038 (Mtskheta Municipality, LEPL Scientific-Research Center of Agriculture); Regional vine collections of the Scientific-Research Center of Agriculture (Guria, Imereti, Samtskhe-Javakheti) will be arranged.
- Seeds of plants of South Caucasus Countries are protected in seed bank of Botanical Institute.

c) Identify possible needs and priorities in terms of the conservation of biodiversity for food and agriculture, and in particular of associated biodiversity and wild food species.

Conservation of all biodiversity have no the equal level for various systems, which can be realized if there will be an institution / group of institutions working to the same direction with similar methodology and providing unique regulation basis for their protection.

2.3 Access and exchange⁴¹

a) Describe in Table 6 the main measures in the country (i) regulating access to; and (ii) ensuring the fair and equitable sharing of benefits arising from the utilization of biodiversity for food and

⁴¹Reference: questions 72 and 73 of country report guidelines.

agriculture (BFA).

Working on Nagoya protocol has already started, to ensure the fair and equitable sharing of benefits arising from the utilization of biodiversity

Table 6. Description of the main measures in the country (i) regulating access to; and (ii) ensuring the fair and equitable sharing of benefits arising from the utilization of biodiversity for food and agriculture (BFA).⁴²

Components of BFA	Description of measures governing access to BFA	Description of measures regulating the fair and equitable sharing of benefits arising from the utilization of BFA
<i>Genetic resources</i>		
PGRFA		
AnGR		
FGR		
AqGR		
<i>Associated biodiversity</i>		
Micro-organisms		
Invertebrates		
Vertebrates		
Plants		
<i>Wild foods</i>		

[Insert rows as needed]

- b) Identify possible needs and priorities in terms of the policies and regulations governing the access to and ensuring the fair and equitable sharing of benefits arising from the utilization of biodiversity for food and agriculture, and in particular of associated biodiversity.

III. Policies, institutions and capacity

3.1 Policies, programs, institutions and other stakeholders

- a) Describe relevant policies and programs the country has adopted and is implementing to support the conservation and sustainable use of biodiversity for food and agriculture, and specify to which extent they address associated biodiversity and wild foods.⁴³ Relevant policies and programs are those that aim at:
- the coordinated use and conservation of sectoral genetic resources
 - addressing food security and nutrition⁴⁴

⁴²Measures facilitating access to the different components of biodiversity for food and agriculture usually vary according to the intended use of the resource (e.g. any use, research and development, commercial use). Examples of possible measures consist of the need to obtain prior informed consent (PIC), sharing benefits based on mutually agreed terms (MAT), having special considerations in place for access to resources held by indigenous peoples and local communities, etc.

⁴³Reference: questions 66, 67 and 78 of country report guidelines; Policies and programmes can include incentives or benefits, such as payments, provision of inputs and subsidies, to support activities for the conservation and sustainable use of biodiversity for food and agriculture.

⁴⁴The relevant policies and programmes should have an explicit reference to associated biodiversity and/or wild foods.

- the sustainable use and conservation of associated biodiversity
- the maintenance of ecosystem services
- improving resilience and sustainability of production systems
- supporting farmers, livestock keepers, forest dwellers and fisher folk to adopt and maintain practices that strengthen the conservation and use of biodiversity for food and agriculture
- the application of an ecosystem/landscape/seascape approach⁴⁵

For the protection and rational use of biodiversity resources the following laws have been developed and adopted in Georgia:

Law on Environment (1996) was developed to regulate the following aspects: protection of environment from hazardous impacts; improvement of environment quality; sustainable development and sustainable use of natural resources; biodiversity conservation and maintenance of ecological balance; protection of unique landscapes and eco-systems; definition of human rights and obligations in the field of environment; environmental education.

Law on Development of Protected Areas (1996) defines establishment, development and operation aspects; defines a system of responsible for management consisting from different bodies at different levels; defines activities allowed within protected areas of different categories.

Law on Fauna (1996) regulates protection and use of wild fauna species, as well as their habitats, migration routs and breeding grounds. It provides sustainable use of wild fauna species and creates legal basis for in-situ and ex-situ conservation.

Forest Code (1999) regulates protection, rehabilitation and use of forest fund. According to definition given in the Forest Code, it includes on legal base the unity of lands and its resources (forests). The Forest Code regulates also property rights on the forest fund. At the time of adopting the Forest Code the Forest Fund was announced as state property. It should be noted that privatization of forests is allowed, which should be regulated by appropriate legislation. Article 9 of the Code envisages the necessity of developing of such regulation. One of the most important goals of the Forest Code is protection of the forest fund of Georgia, conservation of virgin forests and protection of relict, endemic and other valuable species.

In 2003 the Parliament of Georgia adopted the **Law on Red List and Red Book** which gives the legal definitions of Red List and Red Book (relevant recommendations and methodological issues) of endangered species of Georgia. The Red List structure was also legally defined, as well as the relevant procedures for including species in the Red List, procedures for revising, and updating of it. The Law also regulates issues related to planning and financial matters connected with the protection, taking of, rehabilitation and conservation of endangered species.

Law on Licenses and Permits entered into force in August, 2005. According to this Law only few licenses and permits are directly connected with biodiversity field: General License for Forest Use, Special License for Forest Production, Special License for Arranging Hunting Farms, Fishery License, license for Use of Pinecones and of other endangered species listed in CITES Appendices, such as *Gallantusworonowii*, *Cyclamen coumandandAbiesnordmaniana* seeds. Permit on Export, Import, Re-export, Transit and Introduction from the Sea of the Species Listed in the CITES Appendices, as well as their Parts and Derivatives. According to this Law the relevant national regulations should be developed. At the time being these issues are regulated by Orders of the Government.

Biodiversity Strategy and Action Plan entered into force in February, 2005 by Order of the Government. According to the Convention on Biological Diversity all parties (countries) should develop national biodiversity policy and action plan. This document should ensure protection and rational use of biological resources. Hence adoption of it can be considered as a significant step

⁴⁵Reference: question 67 of country report guidelines.

towards implementation of the CBD provisions and towards sustainable development. Enforcement of these provisions requires mobilization of existent scientific potential and close collaboration between governmental, non-governmental, and business sectors. Involvement of the Agriculture, Tourism, Energy, Urban Sectors, as well as public support will be also necessary for successful implementation of the NBSAP. The document provides 10 year strategy and 5 year action plan for protection and rational use of biodiversity in the country (except marine area of the Black Sea). The action plan for the next 5 years should be separately developed, taking into account the existing situation and progress made during the previous 5 years.

Georgian Biodiversity Conservation Strategy shares the principles of pan-European Biological and Landscape Strategy. Some additional principles are also defined by this document.

Besides that the Strategy and Action Plan for *in situ* and *ex-situ* conservation of species and habitats of Georgian biodiversity is recognized as a priority by the Georgian Government. Also the goals of multistage “Aichi Biodiversity Targets, 2013”.

b) Provide a short analysis of the strengths and weaknesses of the policies and programs mentioned above and indicate their level of implementation.⁴⁶

- Due to habitat destruction and extensive, unregulated exploitation many plant and animal species have become endangered with 29 mammal, 35 bird, 11 reptile, two amphibian, 14 fish and 56 woody plant species (2 sp. Species – under critical danger(CR), 18 sp. Species – under endangered species (EN), 36 sp. Species -vulnerable (VU) currently included on the national Red List. In addition 44 vertebrates found in Georgia are globally endangered and included on the IUCN Red List as vulnerable (VU) or higher. In the past century the goitered gazelle and the southern population (Trialeti ridge) of wild goat became extinct in Georgia. The leopard and striped hyena still present but most likely exist as isolated individuals, whilst red deer numbers have drastically decreased (only three small populations have been preserved) in Georgia.

Due to lack of modern and effective tools for data collection, storage and analysis, the identification of actual changes in species and habitat conditions has become quite difficult; this, in its turn, has made the assessment of the current state and trends of biodiversity significantly more complicated. Consequently, there is currently no distinct reasoning for decision making in biodiversity conservation.

However, a national system for biodiversity monitoring (www.biomonitoring.moe.gov.ge) is currently being developed in Georgia with the selection of national indicators recently accomplished. The methods of data collection and analysis, according to individual indicators, are now being developed. The information given within this report, detailing the health, status and trends in species and habitats is, then, based upon surveys, undertaken under a variety of different projects carried out in Georgia in recent years.

The main threats for biodiversity in Georgia are destruction/degradation of habitats and the extensive extraction of biological resources. The principal causes for habitat destruction are timber logging, degradation of water ecosystems and intensive grazing.

Despite the fact that more recent trends indicate a decrease in illicit extraction of forest resources, wood and fire wood processing remains one of the threats to biodiversity. The problem of intensive grazing is mainly problematic for the sub-alpine, alpine ecosystems of the high mountains as well as the semi-arid zones found in the south eastern parts of Georgia where, in both cases, large numbers of grazing livestock (especially sheep) result in soil erosion.

⁴⁶Reference: questions 66 and 67 of country report guidelines.

BOX 3. Provide up to three examples to highlight how stakeholder groups in the country, such as groups or associations of farmers, forest dwellers, fisher folk and livestock keepers, NGOs or other civil society organizations, have actively contributed to the improved sustainable use and/or conservation of biodiversity for food and agriculture and the maintenance of ecosystem services.⁴⁷

- The NGO “Biological association ELCANA” provides long- year activities for preservation traditional endangered varieties of agricultural crops (cereals, legumes, fruits) and recovering of old receipts for their traditional preparation.
- Two private winery is holding the collections of Georgina native varieties of grape including more than 150 varieties in each.

- c) Provide examples of successful inter-ministerial cooperation in the area of conservation and sustainable use of biodiversity for food and agriculture and describe the relevant collaboration mechanisms.⁴⁸
- d) Identify possible needs and priorities in terms of policies, programs and institutions governing biodiversity for food and agriculture, and in particular associated biodiversity and wild food species.⁴⁹

3.2 Capacity

- a) Identify and prioritize training and education needs that target the conservation and sustainable use of associated biodiversity and describe possible constraints.⁵⁰
- b) Identify and prioritize research needs to strengthen the conservation and sustainable use of associated biodiversity, wild foods and ecosystem services and describe possible constraints.⁵¹
- It is strongly need to improve research activities almost in all direction to strengthen the conservation and sustainable use of associated biodiversity, wild foods and ecosystem services. In particular: i) to establish and manage field collections of Crop Wild Relatives of fruits and grapes (*Vitisviniferasilvestris*); ii) to establish and manage arboretums;

IV. Regional cooperation

4.1 Regional initiatives the country is involved in to conserve and use biodiversity for food and agriculture

- a) Describe in Table 7 relevant regional policies and programs embedding the conservation and/or use of biodiversity for food and agriculture, and in particular associated biodiversity, wild food species and ecosystem services.

Table 7. Description of relevant regional policies and programs that embed the conservation and/or use of biodiversity for food and agriculture, and in particular associated biodiversity, wild food species and ecosystem services.⁵²

⁴⁷Reference: question 77 of country report guidelines.

⁴⁸Reference: questions 81 and 82 of country report guidelines.

⁴⁹Reference: question 88of country report guidelines.

⁵⁰ Reference: questions 85, 86 and 90 of country report guidelines.

⁵¹ Reference: questions 87 and 91 of country report guidelines.

⁵²Reference: question 84 of country report guidelines.

Regional policies and programmes	Description
Conservation and sustainable use of grapevine genetic resources of the Caucasus and Northern Black Sea region	In 2004-2008, significant progress has been made within a collaborative project managed by the Biodiversity International (Rome, Italy) and funded by the Government of Luxembourg aimed at strengthening the capacity of the countries of the region (Armenia, Azerbaijan, Georgia, Moldova, Russia, and Ukraine) to ensure the long-term maintenance of <i>Vitis</i> genetic resources, including the cultivated traditional varieties and the wild resources. The activities included identifying, collecting, characterizing, and conserving the diversity of grapevine genetic resources as a basis to improve local viticulture and winemaking industry.

[Insert rows as needed]

4.2 Needs and priorities

- a) Identify possible needs and priorities in terms of embedding biodiversity for food and agriculture, and in particular associated biodiversity, wild foods and ecosystem services into regional and international initiatives.

V. Synthesis of needs and priorities and the possible way forward

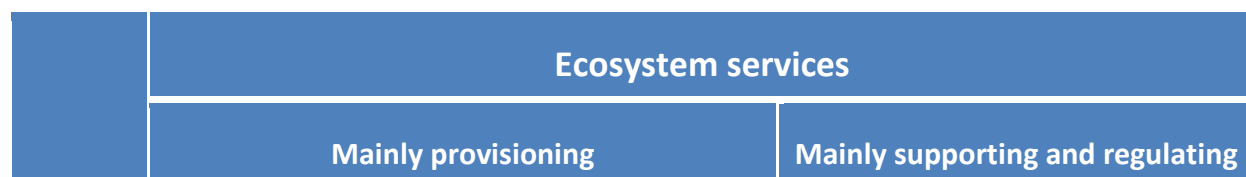
Countries may wish to use Table 8 to summarize their needs and priorities, and possible actions to be undertaken, with respect to the four priority areas of the guidelines.⁵³

Table 8. List of the country's needs and priorities, and possible actions to be undertaken, to conserve and use biodiversity for food and agriculture.

Priority areas	Needs and priorities	Possible actions to be undertaken ⁵⁴
1. Assessment and monitoring		
2. Conservation and sustainable use		
3. Policies, institutions and capacity		
4. Regional and international cooperation		

APPENDIX 1

Figure 1. Recommended scope of *The State of the World's Biodiversity for Food and Agriculture*.



⁵³See sections 1.3 (a), 2.1 (f), 2.2 (c), 2.3 (b), 3.1 (d), 3.2, 4.2 (a) of the present guidelines.

⁵⁴Reference: questions 92, 93, 94, 95, 96 and 97 of country report guidelines.

Biological resources	<p>Food and non-food products provided by cultivated and wild species and genetic resources of plants, animals (vertebrate and invertebrate), aquatic resources and micro-organisms.</p> <p>Examples include trees (timber, fuelwood), crops (food, feed, fodder and dye), livestock (meat, eggs, hides, fur skins and fibre), fish, wild plants (food, medicine), wild relatives, edible fungi, edible insects, bush meat, crustaceans and mollusks (pearls).</p>	<p>Associated biodiversity: species and genetic resources directly involved in supporting and regulating production systems.</p> <p>Examples include soil and planktonic microbes, pollinators, symbionts and kelp forests.</p>
Relevant CGRFA assessments	<p>Plant genetic resources: First and Second Reports on the <i>State of the World's Plant Genetic Resources for Food and Agriculture</i></p> <p>Animal genetic resources: First and Second Reports on the <i>State of the World's Animal Genetic Resources for Food and Agriculture</i></p> <p>Forest genetic resources: <i>The State of the World's Forest Genetic Resources</i></p> <p>Aquatic genetic resources: <i>The State of the World's Aquatic Genetic Resources for Food and Agriculture</i> (expected 2017)</p>	<p><i>The State of the World's Biodiversity for Food and Agriculture (expected 2017)</i></p>

Note: The scope of ***The State of the World's Biodiversity for Food and Agriculture*** includes interactions between plant, animal, forest and/or aquatic genetic resources, ecosystem services (mainly supporting and regulating), associated biodiversity and wild foods.