

REPORTING FORMAT FOR THE GREAT BUSTARD MOU AND ACTION PLAN

This reporting format is designed to monitor the implementation of the Action Plan associated with the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*). Reporting on the Action Plan's implementation will support exchange of information throughout the range and assist the identification of necessary future actions by the Signatory States. The questions presented here go beyond the scope of information already requested from CMS Contracting Parties for national reports to the CMS Conference of the Parties.

GENERAL INFORMATION

<p>Agency or institution responsible for the preparation of this report: Biodiversity and Gene Conservation Department, Ministry of Agriculture</p>
<p>List any other agencies, institutions, or NGOs that have provided input: Kiskunság National Park Directorate (KNPD) – national coordinator organisation of the species</p> <p>Körös-Maros National Park Directorate (KMNPD) Fertő-Hanság National Park Directorate (FHNPD) Hortobágy National Park Directorate (HNPD) Duna-Ipoly National Park Directorate (DINPD) Bükk National Park Directorate (BNPD) MME / BirdLife Hungary</p>
<p>Reports submitted to date: National Report of 2004, 2008, 2013 and 2018</p>
<p>Period covered by this report 1 January 2018 – 31 December 2022</p>
<p>Memorandum in effect in country since: [Date: 06/06/2001]</p>
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PART I. GENERAL

This questionnaire follows the structure and numbering of the Action Plan annexed to the Memorandum of Understanding to make it easier to read the relevant action points before the form is filled in. In some cases, however, sub-actions were not listed separately for the sake of simplicity and to avoid duplications. They should however be taken into consideration when answering the questions.

0. National work programme

Is there a national work programme or action plan already in place in your country for the Great Bustard pursuant to Paragraph 4(g) of the Memorandum of Understanding?

Yes No

1. Habitat protection

1.1. Designation of protected areas.

To what extent are the display, breeding, stop-over and wintering sites covered by protected areas?

Designation of protected areas under national law	Classification of Special Protection Areas according to the requirements of Art.4.1 of the EC Birds Directive
<input type="checkbox"/> Fully (>75%) <input checked="" type="checkbox"/> High (50-75%) <input type="checkbox"/> Medium (10-49%) <input type="checkbox"/> Low (<10%) <input type="checkbox"/> None <input type="checkbox"/> Not applicable ¹	<input checked="" type="checkbox"/> High (>75%) <input type="checkbox"/> High (50-75%) <input type="checkbox"/> Medium (10-49%) <input type="checkbox"/> Low (<10%) <input type="checkbox"/> None <input type="checkbox"/> Not applicable ¹

What measures were taken to ensure the adequate protection of the species and its habitat at these sites?

In general, all main sites at the current distribution area of the GB are **under protection**, either according to the **Hungarian law, or being part of the Natura 2000 network** (or both). In Hungary a total of ca 220 000 ha area is nominated as Great Bustard habitats (total distribution area in the country) from which ca 180 000 ha is protected (nationally and/or as Natura 2000 site). From this, ca 85 000 ha land is protected by national law, ca 175 000 ha land is designated as SPA and ca 95 000 ha as SAC site (latter two giving altogether ca 180 000 ha of Natura 2000 sites for the GB in total).

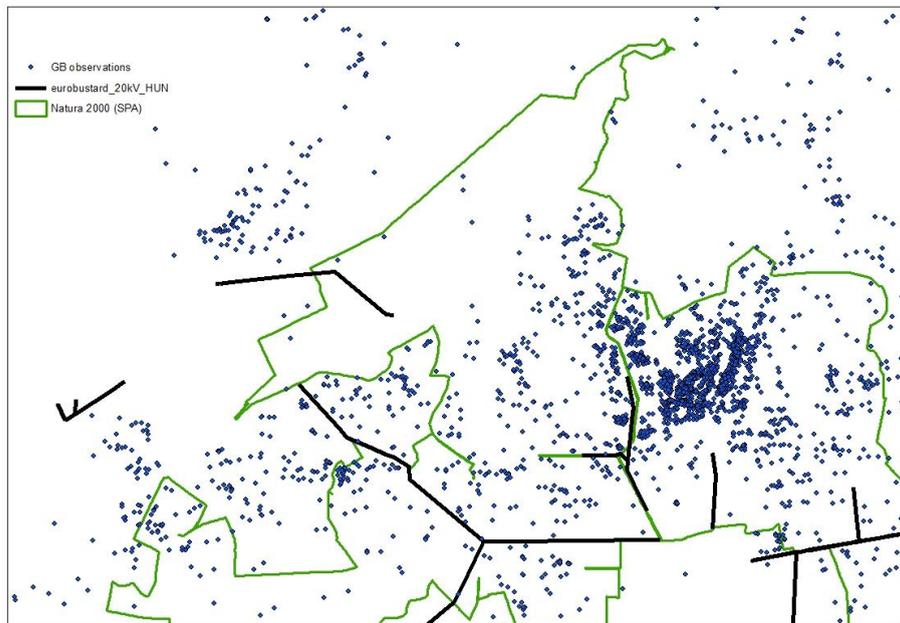
- **No major changes have been detected during the reporting period (2018-2022).**

Regarding most of the nationally protected sites, the National Park Directorates (NPD) own a bigger proportion of the Great Bustard habitats, and most of the NPDs manage this land on their own, however, there are some gaps, especially those sites that are not nationally protected (but part of the Natura 2000 network) like in the FHNPD in Western Hungary, or the DINPD at the Upper Kiskunság region. The two main sub-populations (Kiskunság and Dévaványa) are located on lands owned by the state and assigned for management (either

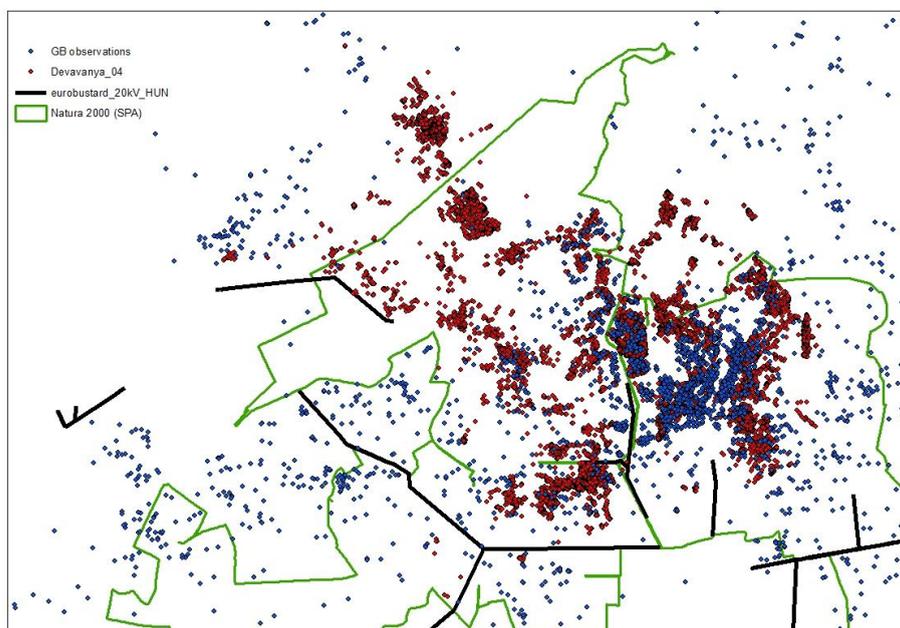
¹ The species occurs only irregularly, no regular stop-over or wintering sites identified.

direct, or indirect, through contracts) to the NPDs, and most of these areas are nationally protected.

Using the Hungarian Land Parcel Identification System (MEPAR) and the Great Bustard monitoring database (including locations of tagged birds) the agricultural area used by Great Bustards can be quantified even more precisely and objectively.



GB observations in Dévaványa (KMNPI) between 2004 and 2020



GB observations (2004-2020) and info of a single bird tagged (2018-2019) in Dévaványa (KMNPI)

The growth of documented GB habitats shows the improvement of GIS database (more and more observation recorded) and the real growth and radiation of the population (especially on the marginal areas of the sub-populations) as well.

Also the “hot spots” within known GB habitats are much better defined due to the huge amount of locations recorded.

During the reporting period a total of ca 78 000 hectares of Great Bustard habitats (with a mixture of grassland and arable fields) were **owned by the state** and assigned for management to NPDs. Most of these lands are contracted out to farmers with the favourable management requirements of Great Bustard protection, but a significant proportion is directly managed by the NPDs themselves.

- **No major changes have been detected during the reporting period (2018-2022).**

Significant changes:

- 99.7 ha used by GB was acquired by Körös-Maros NPD in the reporting period.

A large proportion of the lands owned by the state and managed by the NPDs are **leased to farmers**. The contracts contain the **prescriptions** supporting the protection of GB, however these restrictions show some minor differences between the NPDs. The most typical use of grassland habitats is grazing at the displaying grounds, and mowing at the breeding sites. The timing of first mowing varies between 15th June and 15th July as the earliest starting dates. The most common crops on cultivated lands are alfalfa, winter cereals (wheat, triticale, barley), oil-seed rape, and a relatively big percentage of the arable lands are managed as 1-3 year old fallows or set-aside fields. The use of chemicals is either completely prohibited or is only possible with strict restrictions and under control.

All **managements** (including private farming as well) on lands within the protected areas are under the control of the NPDs, so the activities permitted include the requirements of GB protection. The most typical measures relating to GB protection are the regulation of grazing, mowing (both grass and alfalfa) and the use of chemicals.

The **Natura 2000 network** in itself helps to maintain the current habitats in optimal conditions and prevent further habitat loss due to unwanted developments, like roadbuilding, mining (gravel pits), new electric power-lines, etc. The decline of grasslands has stopped and even reversed within the Natura 2000 network thanks to legislative protection, but on a national scale the decline still continues drastically.

The introduction of **the agri-environmental scheme** at all Great Bustard sites from 1st September 2009 was a big opportunity to offer the possibility for land-users (farmers) to harmonise their farming activity and the ecological needs of GB, outside of the protected areas as well. Between 2015 and 2021, agricultural producers received subsidies for the protection of the Great Bustard on an area of ca 70 000 ha. (see chapter 1.2).

Where are the remaining gaps?

The **growth of the proportion of lands owned by the state and managed by the NPDs** within and outside the protected area (especially on those Natura 2000 sites, which are buffering the nationally protected areas) would be in general desirable for GB protection, as only the well-constructed contracts between the NPDs and the land users can guarantee the long-term sustainability of the GB populations all over Hungary.

The **management on Natura 2000 sites** is regulated mostly on grasslands, however in this case as well, we only find partial measures of conservation; the lack of regulation on stipulating the timing of the mowing on Natura 2000 grassland sites is a missing provision / tool. As the main distribution area of the GB in Hungary is covered by the Natura 2000 network, at the moment the most important remaining gap for the everyday conservation is the **lack of a conservation-oriented regulation on agricultural activities on arable lands** within Natura 2000 sites.

In some parts of Hungary (like Eastern Hungary) the lack of grazing animals results in unwanted succession of grasslands, on the other hand on some parts the high grazing unit of grazing animals causes the overgrazing degradation of GB habitats and an unfavourable crop-rotation, focusing on intensively grown crops like sunflower, maize, soy bean and sugar beet.

- **No major changes have been detected during the reporting period (2018-2022).**

A general problem on almost all GB sites is the high level of **predation** and in some parts the lack of staff specialised in GB conservation.

- **There is some development in predator management, especially in Central and Eastern Hungary (see later at predator management and GB conservation projects.)**

Are currently unoccupied, but potential breeding habitats identified in your country?

Yes No Not applicable²

If yes, please explain how these areas are protected or managed to enable the re-establishment of Great Bustard.

If the regular GB monitoring gives the evidence of appearance on “new” sites used as breeding, wintering or moulting sites, a systematic and more intensive monitoring is carried out to clarify the importance of the particular site.

Once a site is nominated as breeding site the following measures are taken:

1. Informing the land users and trying to find the best management for the GB in the given situation and also making plans for the future to maintain and develop the conditions of the site.
 2. Informing the relevant hunting association and all other relevant stakeholders to avoid further disturbance.
 3. If it is needed, introducing restrictive regulations by the relevant authorities, as it did happen in the past.
 4. It is possible to modify the extension of the agri-environmental scheme every 5 years
 5. Well documented monitoring and mapping of the site focusing on GB, but extended to other relevant bird species with national and EU level of importance.
- **No major changes have been detected during the reporting period (2018-2022).**

1.2. Measures taken to ensure the maintenance of Great Bustard habitats outside of protected areas.

Please describe what measures have been taken to maintain land-use practices beneficial for Great Bustard outside of protected areas (e.g., set-aside and extensification schemes,

² Countries *outside* of the historic (beginning of 20th Century) breeding range of the species.

cultivation of alfalfa and oilseed rape for winter, maintenance of rotational grazing, etc.).

Agri-environmental program (AKG):

The Great Bustard schemes can be found within the Environmentally Sensitive Area program (MTÉT), as the nature conservation part of the agri-environmental program.

On the Hungarian GB habitats the following periods were covered with agri-environmental schemes specialised on GB conservation measures:

2002-2003 National Agri-Environmental Program (NAKP)

01. May 2004. Hungary joins to the European Union

2004-2009 National Rural Development Plan (NVT)

2009-2014 New Hungarian Rural Development Program (ÚMVP)

2015 No GB schemes implemented

2016-2020 Rural Development Program (VP)

2021 extension of the Rural Development Program (VP)

2022-2024 minor modification of the management regulation at the GB schemes introduced at VP:

- minimum requirements at GB schemes and opportunity of further regulations
- unification of mowing regime NOT earlier than 1st of July
- extra subsidies after stricter management regulations, like less than 5 ha of the parcel size of arable lands, or late mowing

From the support options of the Common Agricultural Policy, Hungary has been operating conservation measures for the Great Bustard since 2002, primarily within the framework of agri-environmental (AE) management payments. AE measures for the protection of the Great Bustard are available to agricultural producers in High Nature Value Areas. Measures encourage farmers to create the appropriate crop structure (nesting sites, winter feeding areas), to establish fallows, to reduce the use of input materials (artificial fertiliser, plant protection products) and to minimise human disturbance. In order to manage grasslands in a Great Bustard-friendly manner, late mowing, maintenance of unmowed areas, bird-friendly harvesting methods and special protection of found nests contribute to the habitat needs of the species within the AE measures. Between 2015 and 2021, agricultural producers received subsidies for the protection of Great Bustard on an area of approximately 70,000 hectares, approx. 60% of the applicants received support. In the period 2022-2024, all those who applied for support received Great Bustard protection payments, so in total more than 80,000 hectares of Great Bustard protection habitat management can be realised with the involvement of private farmers.

The Natura 2000 land use regulation, which requires the extensive management of grasslands, and the related compensation payments also have a positive effect on the proper management of the habitats of the Great Bustard, primarily due to the introduction of bird-friendly mowing and the preservation of unmowed areas. The extent of the areas affected by the regulation and compensation payments is approximately 280,000 hectares, which partially overlaps with the AE measures for the protection of GB.

The positive impact of GB protection and other nature conservation measures on biodiversity was verified during the impact assessments of the agricultural support system.

However, it is questionable to what extent the general intensification of agricultural production - which is partly caused by agricultural subsidies - affects the effectiveness of the otherwise effective GB measures.

To what extent do these measures, combined with site protection, cover the national population?

Fully (>75%)

X Most (50-75%)

Some (10-49%)

Little (<10%)

Not at all

Not applicable¹

Are recently (over the last 20 years) abandoned Great Bustard breeding habitats mapped in your country?

X Yes

No

Not applicable¹

What habitat management measures have been taken to encourage the return of Great Bustard?

Within the framework of agri-environmental management measures, agricultural producers can choose land management prescriptions throughout the country that have a positive effect on the preservation of biodiversity. These land management prescriptions (late mowing, protection of field margins, etc.) can contribute to improving the condition of potential GB habitats. In Natura 2000 arable areas, additional measures seems to be necessary in order to maintain extensive management of the potential habitats.

Accidental information turned up about the appearance of GBs outside of traditional GB habitats.

If there were any measures taken, please provide information on their impact.

Within the LIFE Great Bustard project a special action ("Habitat suitability surveys based on Spanish best practice transfer and satellite tracking in Hungary") is under execution to clarify the importance of particular sites.

1.3. Measures taken to avoid fragmentation of Great Bustard habitats.

Are new projects potentially causing fragmentation of the species' habitat (such as construction of highways and railways, irrigation, planting of shelterbelts, afforestation, power lines, etc.) subject to environmental impact assessment in your country?

X Yes

No

Not applicable¹

Is there any aspect of the existing legislation on impact assessment that limits its effective application to prevent fragmentation of Great Bustard habitats?

X Yes No Not applicable¹

If yes, please provide details.

The **main threats**, which can cause the fragmentation or the reduction of the GB habitats in Hungary are the followings:

- a. Opening new gravel pits or creating lakes
- b. Construction of wind farms (including in neighbouring countries, with potential impact on trans-boundary populations)
- c. Establishing new power lines (often as a co-investment of wind farms)

- d. Road (and railway) construction
- e. Irrigation (often followed by the cultivation of unfavourable crops)
- f. Afforestation
- g. Economic developments
- h. Oil- and gas pumps and pipelines

According to Hungarian (and European) legislation, it is not allowed to destroy the habitats of the protected species, like the GB and it is not allowed to make any kind of activity (especially the ones which cause irreversible changes on the habitats), that can have a negative effect on their population. In practice, projects still happen to be implemented on GB sites (see below). Sometimes the gap in these procedures is the fact that all decisions can be based only on the present distribution area of the GB, and not the potential ones in the future.

Measures taken against fragmentation:

An important development introduced in the national legislation within the reporting period, in 2021, concerns the ecological network (the ecological network includes practically all nationally protected areas and the Natura 2000 network, as well as ecological corridors and buffers): no power plant (including solar power plants) may be established in ecological corridors, except for domestic-scale power plants on rooftops.

Have there been any such projects implemented in any Great Bustard habitat in your country since signing this Memorandum of Understanding? Yes No Not applicable¹

Please, give details and describe the outcome of impact monitoring if available.

1. Irrigation and sometimes illegal water pumps have a negative effect on almost all GB sites in Hungary resulting in an intensification of agrarian production. The increasing disturbance and the growing share of non-preferable crops are the main problem, but sometimes their indirect effect on underground water, and chemical use as well. Their effect has increased in the last years, as since 2016 the development of irrigation (like development of watering infrastructure) has been supported without territorial restrictions for Natura 2000 sites. <https://www.palyazat.gov.hu/vp2-414-16-a-mezgazdasgi-vzgzazdlkodzi-gazat-fejlesztse#>

2. Irrigation must be treated as habitat loss and fragmentation of the GB populations as the results of several studies show that birds avoid these intensively managed areas.

Irrigation farming is expected to increase, as a response to the climate change, but in order to save agro-steppe habitats and their species, the adverse effects of agricultural intensification need to be urgently addressed at both local and European levels. (Spakovszky, P. & Raab, R. 2020. Impact of agriculture irrigation on the habitat structure and use by Great Bustard (*Otis tarda*) in a Natura 2000 site. – *Ornis Hungarica* 28(2): 74–84. DOI: 10.2478/orhu-2020-0018)

https://www.researchgate.net/publication/346732941_Impact_of_agriculture_irrigation_on_the_habitat_structure_and_use_by_Great_Bustard_Otis_tarda_in_a_NATURA_2000_site

3. The economic pressure on opening new gravel pits and establishment of new power lines continues to be high, however no realisation happened on GB habitats during the reporting period.

4. The development and extension of roads and railways are also a general problem nationally. Recent worry due to its unknown volume and effects is the expansion of the railway between Budapest (Hungary) and Beograd (Serbia) as the already existing track crosses important GB habitats in the Kiskunság region. Faster trains much more frequently passing at GB habitats resulted in unfavourable conditions on several places within the range earlier, so special compensation measures must be taken to reduce negative effects in case of implementation.

With regard to reduction of fragmentation, good progress was documented as some of the most dangerous power line sections (100.44 km altogether in the reporting period) have been buried with the cooperation of the energy supplier companies, NPDs and the Ministry of Agriculture (see chapter 2.3.2.). Other sections of power lines have been equipped with bird diverters.

During the period of the LIFE GREATBUSTARD project (2016-2023) ca 60 kms of medium-voltage power lines were removed in the Upper-Kiskunság region. The positive effect of these measures will hopefully be reflected in lower numbers of collisions and the change in habitat use during the upcoming reporting period after 2023.

2. Prevention of hunting, disturbance and other threats

2.1. Hunting.

Is the Great Bustard afforded strict legal protection in your country? **Yes** No

Please, give details of any hunting restrictions imposed for the benefit of Great Bustard including those on timing of hunting and game management activities.

The hunting restrictions are very variable in different parts of the country, however, the principles are the same. The main issues regarding hunting are roe deer hunting during displaying (disturbance) and at the breeding (endangering) sites during the springtime, but several other hunting activities have an effect on GB. The HNPD, the KMNPD, the KNPD and the BNPD run the hunting activity on their own at the main part of the protected areas (mostly displaying grounds), where the GB is present.

The 20-year hunting plan approved in late 2017 for each hunting district contains prescriptions from the nature conservation aspects, which are given by the NPDs being in charge at certain areas. These restrictions focus on:

1. Predator control (supporting only the effective methods)
2. Hunting of roe deer in springtime (restrictions on location and timing)
3. Feeding of game and driven hunting of brown hare and pheasant (avoid disturbance of wintering GB flocks)
4. Hunting and game monitoring at night
5. Traffic on GB habitats

At all sites good cooperation exists between the NPDs and the hunting societies, with regular meetings to find the balance between GB protection and the economic needs of the societies.

Detailed regulations on GB habitats: (no changes since the last report)

1. All hunting- and wildlife management activities must be agreed ahead with the NPDs concerned on GB breeding and displaying sites between 15 March and 1 July.
2. In GB habitats the population of the following game species must be controlled systematically: European badger, red fox, golden jackal, hooded crow, magpie, and stray animals.
3. Instructions for systematic predator management:
 - 3.1. Between 15 March and 1 July territory-based control (built on trapping methods) must be implemented
 - 3.2. In open areas (grass- and arable lands) control must be undertaken until 15 April, afterwards only along linear facilities (roads, channels), the surroundings of reedbeds, woods, etc., avoiding open parts, where GBs breed.
4. Permanent population of wild boar can not be kept on GB habitats
5. Night hunting and game estimation must be agreed ahead with the NPDs concerned on GB habitats.
6. During hunting- and wildlife management activities (including traffic and driven hunts) in wintertime, the resting and feeding places of GBs must be avoided, especially in foggy conditions.
 - 6.1. Location of driven hunts must be agreed ahead with the NPDs concerned on GB habitats.

Please, indicate to what extent these measures ensure the protection of the national Great Bustard population? The national population is covered by restrictions on hunting to prevent hunting-related disturbance:

X Fully (>75%)

- Most (50-75%)
- Some (10-49%)
- Little (<10%)
- Not at all
- Not applicable¹

2.2. Prevention of disturbance.

What measures have been taken to prevent disturbance of Great Bustard in your country, including both breeding birds and single individuals or small flocks on migration?

Significant part of the GB sites are under national protection, where **all activities that might have a negative effect on GBs, including any kind of disturbance**, jeopardise the success of their breeding or other vital functions of individuals, and damage their habitats, sites of occurrence, shelters, feeding, nesting, resting or roosting sites are **prohibited** by law and enforced by the relevant nature conservation authority.

There is **no free access** to the main part of the protected areas, so human disturbance is limited. The borders of the “no entry” zones are well marked with posts and gates, and also well communicated to the local stakeholders. As farming and hunting is also restricted, the accidental disturbance (walking or driving in) is on a very low level.

Small **aeroplanes** might cause disturbance for displaying or resting birds at some places (like Kiskunság), however rules and regulations apply to flying as well. There is good cooperation with the nearby airports to filter out the non-cooperative pilots.

Technical sports (like kites, or gliders) can cause disturbance in the breeding and wintering season, especially outside of the nationally protected areas. According to the law, disturbing a protected species is prohibited. Technical sports (like the ones mentioned) are linked to the permission of the nature conservation authority.

Informing the general public about its importance is an everyday task of the local GB conservation officers and the ranger service of the NPDs.

During the LIFE GREATBUSTARD project an education and visitor centre has been established in the Kiskunság region near Kunszentmiklós, named “Steppe House”. In addition 5 new viewpoints have been built to inform and orient the general public, like local people, visitors, and key stakeholders.

More detailed education program is under preparation, however the education of young age groups is already ongoing, just like the information of farmers and hunters as key stakeholders.

Disturbance caused by eagles: Natural disturbance occurs by the presence of eagle species in GB habitats. The breeding and wintering density of eagle species (white-tailed eagle – WTE, imperial eagle – IE, golden eagle – GE) grew during the last decades due to successful conservation projects, and also the conditions on GB habitats are more and more favourable to eagle species (e.g. the prey density is higher due to successful predator management). All eagle species are strictly protected in Hungary.

Please, indicate to what extent these measures have ensured the protection of the national population. The national population is covered by restrictions on other activities causing disturbance:

- Fully (>75%)
- X Most (50-75%)**
- Some (10-49%)
- Little (<10%)
- Not at all
- Not applicable¹

2.3. Other threats

2.3.1. Prevention of predation.

What is the significance of predation to Great Bustard in your country?

The real effect of predators on breeding success is unknown (not quantified), but **probably very high**. Some indirect results show that the optimal habitat management and the predator control only together can ensure the optimal conditions to the GB populations in Hungary.

For healthy, **fully grown individuals** there is no natural predator, but on displaying ground the exhausted adult males are often taken by foxes, but in these cases the cause of death is not necessarily predation.

The predation on **eggs and small chicks** can be measured only on nests found in emergency situations, however this does not reflect on natural conditions, since if the nest is once disturbed, very often the environment of the nest is changed so drastically due to the agricultural activity (by flushing the female and creating a buffer zone) that it attracts predators that can ultimately cause significant losses via ‘**secondary predation**’.

In the Hortobágy and Bihar Plain systematic monitoring was carried out, showing that 30–40% of eggs are predated before hatching and about 80-100% of nests found in emergency situations were unsuccessful due to predation. This study reveals the conditions in other sites in Hungary as well.

The **intensive growth of** the Hungarian **wild boar** population causes more and more problems to ground breeding species by destroying nests and eating eggs or even smaller chicks.

The population growth of eagle species has a negative effect on GB populations all over Hungary, however the direct predation is probably not significant. Eagles have been detected attacking wounded, flightless adult GBs, and also juveniles were predated by eagles. Eagles have a negative effect on the release program at Dévaványa as well. In spite of these the main conflict between eagles and bustards is the disturbance caused on GB habitats; which is affecting the distribution of breeding females, but also the displaying and wintering flocks as well. (see chapter 2.2)

What are the main predator species?

- *Mammals*: red fox (*Vulpes vulpes*), wild boar (*Sus scrofa*), stray dog (*Canis lupus familiaris*) and possibly golden jackal (*Canis aureus*). (In some peripheral regions raccoons (*Procyon lotor*) are spreading.)
- *Birds*: hooded crow (*Corvus cornix*), marsh harrier (*Circus aeruginosus*), raven (*Corvus corax*) and eagle species; white-tailed eagle (*Haliaeetus albicilla*), eastern imperial eagle (*Aquila heliaca*), golden eagle (*Aquila chrysaetos*).

Tagging of juvenile birds highlighted the importance of the red fox population on predation of GBs. A relatively high percent of juvenile birds are predated during night hours related to fox-predation.

The LIFE GREATBUSTARD project aimed to establish regional cooperation between hunting societies and NPDs. The key species are the: red fox, hooded crow, European badger and magpie to control, but also golden jackal, wild boar and non-native predator species are hunted. Hunting activity is implemented by territory-based trapping as the most effective legal method of predator management..

What measures have been taken to control predators in areas where Great Bustard occurs regularly?

- *Red fox*: trapping at the dens, using artificial burrows, shooting on feeders.
- *Wild boar*: suitable habitat management like grazing on grasslands at deeper elevations (“swamps”), reducing spread of bushes (especially the invasive species), and adjusting crop rotation and shooting on driven hunts. Prevention of permanent population to be established on “clear” sites, intensive hunting on places where present.
- *Stray dog*: shooting.
- *Golden jackal*: prevention of spreading on GB habitats.
- *Hooded crow*: trapping at nests, catching on feeders, shooting.
- *Marsh harrier*: not relevant, as it is a protected species in Hungary.
- *Raven*: spreading in Hungary, not relevant, as it is protected species in Hungary
- *Eagles*: not relevant, as it is protected species in Hungary, see at chapter 2.2

How effective were these measures?

Effective (predation reduced by more than 50%)

Partially effective (predation reduced by 10–49%)

Less effective (predation reduced by less than 10%)

Not applicable¹

Efficiency depends on the input of personnel, time and energy. There are well developed methods to control all predator species (see above), but as the activity of the hunting societies are different just like the protection status of the hunting areas, the predation level varies throughout the range of GB in Hungary.

2.3.2. Adoption of measures for power lines.

What is the significance of collision with power lines in your country?

Collision is still the main mortality case for adult birds (not counting natural death at display grounds), resulting in approx. 80% of known fatalities. The collision with high-voltage power lines (HVPL) is still high nationally, especially when birds cross between sub-populations. Collisions with train lines cause problems in the Kiskunság, while collisions with electric fences and fences are rather occasional.

What proactive and corrective measures have been taken to reduce the mortality caused by existing power lines in your country?

The only effective way to reduce mortality on MVPLs is the underground cabling.

During the reporting period the following underground cabling projects took place:

1. 29 km in Kiskunság, 2022 by E.ON (25 km medium voltage + 4 km small voltage power lines)
2. 2.24 km in Hanság (to replace 7 km powerline) 2022, by E.ON
3. 35 km in Kiskunság (Kunpeszér, Kunszentmiklós), 2018-2021 by MVM DÉMÁSZ
4. 3.5 km in Békéscsaba, 2018-2021 by MVM DÉMÁSZ
5. 2.3 km at the dump at Hejőpapi, work in progress in 2023 by MVM ÉMÁSZ
6. 10 km in Mátra Hill, 20 km Bükk Hill, 2022 by MVM ÉMÁSZ
7. 18.4 km in Túrkeve, 2020-2023 by OPUS TITÁSZ

On high voltage power lines marking is still the only possibility to reduce risk of collision.

What is the size of the populations affected by these corrective measures?

As the most dangerous sections of MVPLs at all main sub-populations will be buried underground, the entire Hungarian population will be affected by these measures.

How effective were these measures?

X Effective (collision with power lines reduced by more than 50%)

- Partially effective (collision with power lines reduced by 10–49%)
- Ineffective (collision with power lines reduced by less than 10%)
- Not applicable¹

At places where underground cabling was completed or major MVPLs were removed, the number of collided birds have dropped.

In the Kiskunság region during the period 2013-2017 26% (7 out of 27 cases) of all dead individuals found (including chicks as well) collided with MVPLs. During the period 2018-2022 it was only 9% (2 out of 22 cases), and one of the 2 problematic sections has already been removed since then.

The ratio of collision with train lines is relatively high at Kiskunság (2 cases), while with HVPLs at Eastern Hungary (3 cases).

Monitoring data shows that urgent measures must be taken at KMNPD due to regular collisions at key habitats as well.

Even though the numbers are higher in the current reporting period at some regions (like KMNPD), they only reflect the need for more lines to be buried, and indicate the possible misjudging of previous prioritisation. Underground cabling results in a 100% effective solution. With these measures the chance of collision (and electrocution of other relevant species) declines to zero, additional GB habitats will be suitable to GBs by eliminating fragmentation, and it has a positive effect on landscape protection in one.

2.3.3. Compensatory measures.

What is the size (in hectares) of Great Bustard habitat lost or degraded for any reasons since the Memorandum of Understanding entered into effect (1 June 2001)?

The main and relatively “new” reasons of degradation are:

- **irrigation**: the surface of irrigated agricultural lands had been growing gradually since 2004 (started in Western Hungary and spread towards east) but this growth (the number of cases) became more intense during this reporting period. The extremely dry weather of 2022 gave an additional moment to increase applications for permitting irrigation on GB habitats. Recently irrigation is treated as an adequate answer to climate change
 - KMNPD: ca 700 ha, mostly outside of the Natura 2000 network, but affecting the GB population
 - FHNPDP: **ca 1370 ha, within SPA, which is more than 10% of the total area of the site designated as GB habitat.**
 - KNPDP: some (less than 5) cases under implementation. Mostly outside of Natura 2000 (SPA), but on occupied GB habitats, so all permissions contain compensation measures. Compensation measures cover proper habitat management, mostly creation and maintenance of fallowlands.
- **Irrigation is considered as a cause for habitat loss, due to birds avoiding irrigated parcels and/or it can lead to unsuccessful breedings.**
- **solar power plants**: demands were increasing and were spreading rather intensively during the reporting period. Although it still has no major effect on GB habitats, the trend is worrying.

Effects of “new wave” habitat losses will be measured during the upcoming period, however

the cumulative effect of irrigation is already reflected in the monitoring data, as together with inadequate fallow land management they lead to population decline on the Hungarian site in West Pannonia.



Irrigated parcels in Moson Plain (Western Hungary) in 2022

Former threats like afforestation, degradation of habitats, industrial development, improvement of railway and road system, opening and extension of gravel pits, etc. are still on the agenda of GB conservation.

The **degradation** of habitats is reversible, the most common type of degradation is overgrowing by different kinds of bushes, like *Eleagnus angustifolia*, or *Crataegus* species, but also the lack of grazing or mowing might cause temporary degradation. The size of degraded grassland area fluctuates year by year, but as it was mentioned, the extension generally is not significant.

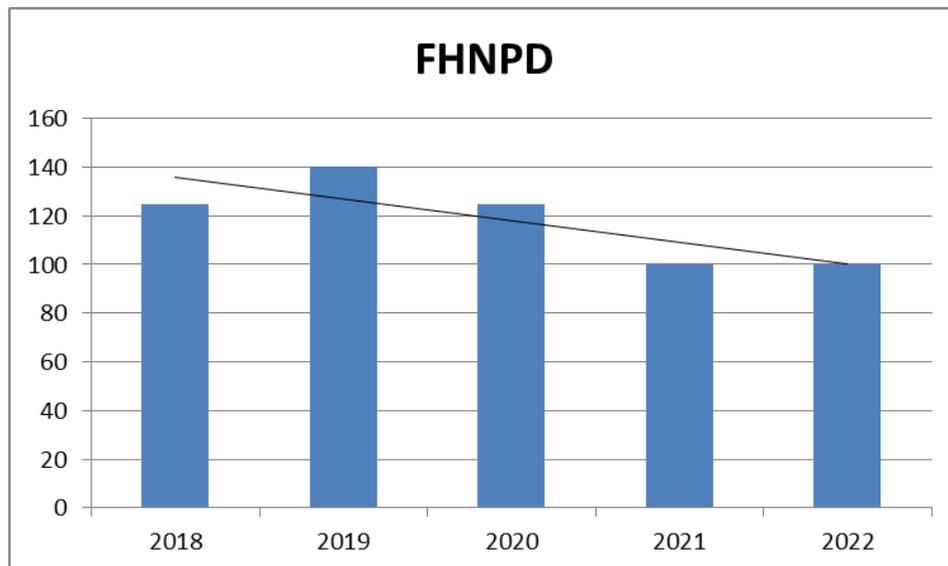
Irrigation causes significant loss of suitable GB habitats due to intensification, increase of disturbance and changes in crop rotation. (see chapter 1.3)

Apart from Western Hungary there wasn't any significant loss of GB habitat since the MoU entered into effect.

- **No major changes have been detected during the reporting period, but more field observation, more monitoring and proper evaluation of the compensation system is needed to be prepared for and to be able to manage this conservation threat.**

What is the size of the populations affected?

Approx 100-140 individuals of the breeding population. (The effects must be treated together with other reasons (habitat suitability) and in all west pannonian meta-populations due to intensive movements between sub-populations.)



Decline of GB population in Western-Hungary between 2018 and 2022

Were these habitat losses compensated? Yes Partially No **Not applicable**¹

If yes, please explain how.

Were these measures effective? Yes Partially No **Not applicable**¹

Please, give details on the effectiveness or explain why they were not effective if that is the case.

3. Possession and trade

Is collection of Great Bustard eggs or chicks, the possession of and trade in the birds and their eggs prohibited in your country? **Yes** No

How are these restrictions enforced? What are the remaining shortcomings, if any?
Not relevant.

The Great Bustard is a **strictly protected species** in Hungary. According to Act no. LIII of 1996 on Nature Conservation in Hungary, the collection, capture, killing, possession, exchange or sale and purchase of any individual is prohibited. Authorization shall only be granted out of nature conservation or other public interest.

Please indicate if any exemption is granted or not all of these activities are prohibited.
No exemption is granted.

4. Recovery measures

4.1. Captive breeding^{3*} in emergency situations.

Is captive breeding playing any role in Great Bustard conservation in your country?

Yes No

Please, describe the measures, staff and facilities involved and how these operations comply with the IUCN criteria on reintroductions.

The Great Bustard Rescue Center at Dévaványa (Körös-Maros National Park) was established in 1978. Nowadays a well-constructed system is operating with separate buildings, rearing and releasing pens and a very well trained staff. One person is in charge, who is the head of the centre and the number of temporarily applied co-workers may vary during the year. The main activity is the rearing of eggs rescued from emergency situations, like mowing, harvesting, grazing and spraying. Eggs or chicks are never collected from the safe side, only from emergency situations.

The releasing program is based on a 400 ha releasing pen, where the almost fully fledged birds are taken with the maintenance of regular feeding and in the first period 24 hour guarding. The habitat structure has been developed according to the ecological needs of the GB and the large size of the pen offers an optimal habitat not just for the artificially reared birds, but for the wild ones as well. This is the key factor of releasing, as the repatriated birds gradually lose human contact and turn to wild groups of birds. By the end of summer or early autumn all young birds join wild ones and spread around the station.

During the reporting period (2018-2022), 58 individuals were released and marked with coloured rings, of which 29 individuals were observed as marked birds (in total 77 times) among wild GBs immediately after release, which shows very good success in the first stage (joining wild groups). 50% of the signed birds were seen after release. In 2018-22 total observation: 171 times from 58 individuals (which have been released since 2009). There is data available about our birds in another GB territory in the Trans-Tisza region.

^{3*} In effect, “captive breeding” should be read as “captive rearing” according to current practices.

4.2. Reintroduction.

Have there been any measures taken to reintroduce the species in your country?

Yes No

If yes, please describe the progress. If there was any feasibility study carried out, please summarize its conclusions.

4.3. Monitoring of the success of release programmes.

Are captive reared birds released in your country?

Yes No

If yes, please summarize the experience with release programmes in your country. What is the survival rate of released birds? What is the breeding performance of released birds?

Since 2006, the Great Bustard Rescue Center has marked the birds with coloured rings. 102 chicks got marked between 2006-2022, during that time there were a total of 380 observations of 69 birds. 43 birds survived their first winter for sure, which is a 42.16% success rate. The oldest released bird was 14 years old when observed.

The re-sighting of colour rings is not very easy. In order to make this easier and track/monitor the birds in their further lifetime there is a plan to apply radio-transmitters to elongate the monitored period after releasing the birds.

Summary of colour-ringed (CR) birds and their observations:

years of release	number of CR birds released	CR birds seen	number of observations	years of observations
2006-2022	102	69	380	2006-2022
2009-2022	unknown	58	171	2018-2022
2018-2022	58	29	77	2018-2022

What is the overall assessment of release programmes based on the survival of released birds one year after release?

- Effective (the survival is about the same as of the wild ones)
- Partially effective (the survival rate is lower than 75% of the wild birds)
- Ineffective (the survival is less than 25% of wild birds)

Not applicable⁴

⁴ No release is taking place in the country.

5. Cross-border conservation measure

Has your country undertaken any cross-border conservation measures with neighbouring countries?

Yes No Not applicable⁵

Please, give details of your country's collaboration with neighbouring countries on national surveys, research, monitoring and conservation activities for the Great Bustard. Especially, list any measures taken to harmonise legal instruments protecting Great Bustard and its habitats, as well as funding you have provided to Great Bustard for particular conservation actions in other Range States.

GREAT BUSTARD LIFE 2016-2023

Cross-border protection of the Great Bustard in Central Europe is a 7-year nature conservation project started in 2016, implemented in Austrian-Hungarian cooperation, funded by EU LIFE Nature, co-funded by the responsible Ministries of the two countries.

- Project title: Cross-border protection of the Great Bustard in Central Europe
- Project code: LIFE15/NAT/AT/000834
- Project duration: 25 July 2016 - 31 December 2023

The aim of the project is to stabilise the population of Great Bustard (*Otis tarda*) in the Carpathian Basin on the long run, by managing the main threatening factors: collision with mid-voltage power lines, predation of nests, negative effects of intensive agriculture, lack of knowledge and unintentional human disturbance.

During the implementation, several sections of mid-voltage power lines have been converted into underground cables in the most sensitive areas. Key predators of the Great Bustard, such as fox, badger, and corvids are managed by innovative hunting techniques in cooperation with professional hunters and hunting associations. Great Bustard individuals have been GPS-tagged in order to investigate key mortality factors of chicks, habitat suitability/preference, and metapopulation dynamics. Information and education materials have been prepared and presented for farmers, field controllers and farmer advisors/consultants on nature-friendly agricultural methods and techniques. Co-operations are initiated with agro-technology companies to assess existing agro-technologies in the light of environmental/natural effects and also to design/develop nature-friendly solutions. An educational and visitor centre has been established in Kiskunság as an information and education hub; information campaigns are carried out and discussion opportunities have been established for all relevant stakeholders (hunters, farmers, agriculture consultants and agriculture supply experts). Effect of project actions will be followed by monitoring of Great Bustard, co-existing protected bird species and also small game species.

<https://www.grosstrappe.at/en/homepage.html>

<https://www.tuzok.hu/en/content/great-bustard-life-2016-2023>

LIFE STEPPE ON BORDER

International project to improve habitat conditions for Great Bustard and Red-footed Falcon in the border region of Hungary and Slovakia.

- Project title: Long-term conservation of Great Bustard and Red-footed Falcon in border region of Hungary and Slovakia

⁵ For countries which do not have any transboundary population.

- Project code: LIFE20 NAT/SK/001077
- Project duration: February 2022 – 30 April 2027

The project aims to support the long-term growth of populations, of the Red-footed Falcon (*Falco vespertinus*) and the Great Bustard (*Otis tarda*) and the conservation of their habitats in Hungary and in Slovakia, and indirectly in Austria, on the western border of the distribution ranges for breeding population of both species in Central Europe. Two Natura 2000 sites, 'Mosoni-sík' (HUFH10004) and 'Fertő tó' (HUFH10001) are the target areas for the Great Bustard.

The main objectives are to create safe nesting sites for the Great Bustard by incorporating extensively cultivated arable areas (fallow land strips), and to increase the breeding opportunities and the area of short, species-rich grasslands for the Red-footed Falcon, thereby increasing the breeding success of both species. Several cooperation agreements have been concluded with farmers on the Moson Plain, in which they undertake the maintenance of the fallow strips necessary for the GB and the RFF. Compensation will be realised from the project. With external and internal professional staff, a monthly synchronised count is carried out in the Slovakian and Hungarian habitats, and the two species are continuously monitored in the two target areas.

<https://www.steppelife.eu/en/>

ROHU-14 – THE NATURE CORNER

A project aimed at cross-border cooperation for the protection and efficient use of common values, heritage and resources.

- Project title: Conservation, protection and promotion of the natural values from Salonta-Békéscsaba cross-border area, ROHU-14 – The Nature Corner
- Project duration: 54 months, launched on 1 March, 2018
- Financed by the EU through the European Regional Development Fund, within the Interreg V-A Romania-Hungary Program, and with the support of the Romanian and Hungarian Government

Project leader: Salonta Municipality, partners: Körösök Völgye Natúrpark (Körös Valley Natural Park) Association, Municipality of Békés and Milvus Transylvania West Association.

The project aimed at the small cross-border population of around 40 GB individuals, which use territories on each part of the border with Hungary, in the area of Salonta-Mezőgyán. Objectives included the elimination of the physical barriers in the Great Bustard habitats (6 km of MVPLs were placed underground), the reduction of the number of natural predators of Great Bustards during the nesting period, promoting local values through activities for various target groups (teachers, children, farmers, local population), and the exchange of experiences with other experts.

<https://milvus.ro/en/proiecte/rohu-14-the-nature-corner-natural-treasures-in-the-corners-of-two-countries/>

<https://bekesrohu14.hu/> (in Hungarian language)

PANNONSTEPPE - HUSRB/1602/12/0065 Interreg-IPA CBC

Title of the project: Protection of dominant animal species of the Pannonian steppe in the border area between Hungary and Serbia

Project implementation period: January 15, 2018 - January 15, 2020

Lead beneficiary: Vojvodina Provincial Nature Conservation Institute

Partners:

- Kiskunság National Park Directorate;
- Regional Secretariat for Urban Planning and Environmental Protection (Pokrajinski sekretarijat za urbanizam i zaštiti životne svetno);
- Perjanica Hunting Association

The aim of the project is to preserve the two dominant animal species of the Pannonian region, the Meadow Viper and the Great Bustard, with the help of habitat management measures, which significantly contribute to the growth of the populations of the two species in both countries.

Protecting the last remaining population of GBs in Serbia:

GB is a rare and endangered bird species in Europe, which lives exclusively in Northern Banat in Serbia. Within the framework of the project, in order to protect the population of about 11 birds, the Serbian partners will fence an area of 115 hectares in the “GB Pastures” Special Nature Reserve with a wildlife fence in order to ensure undisturbed conditions for the breeding birds. In parallel with the construction of the fence, various interventions (for example, sowing of crops, controlling predators) make the living conditions more favourable for the birds in the last GB habitat in Serbia.

OTHER

Regular cooperation between Serbian, Romanian and Hungarian Great Bustard experts, synchronous counts are implemented within the framework of the international (Central European) coordination.

6. Monitoring and research

6.1. Monitoring of population size and population trends.

Are the breeding, migratory or wintering Great Bustard populations monitored in your country?

Yes No

What proportion of the national population is monitored?

All (>75%)

- Most (50-75%)
- Some (10-49%)
- Little (<10%)
- None
- Not applicable¹

What is the size and trend in the national population?⁶

Breeding/resident population

1573 individuals (2022)

Sex ratio is: 1,703

No. of adult males: **582**

No. of females: **991**

No. immature males: **unknown**

Trend: Declined by less than 5% over the last 10 years

Stable

Increased more than 25% over the last 20 years

Non-breeding population (on passage, wintering) **Not relevant.**

No. of adult males: _____

No. of females: _____

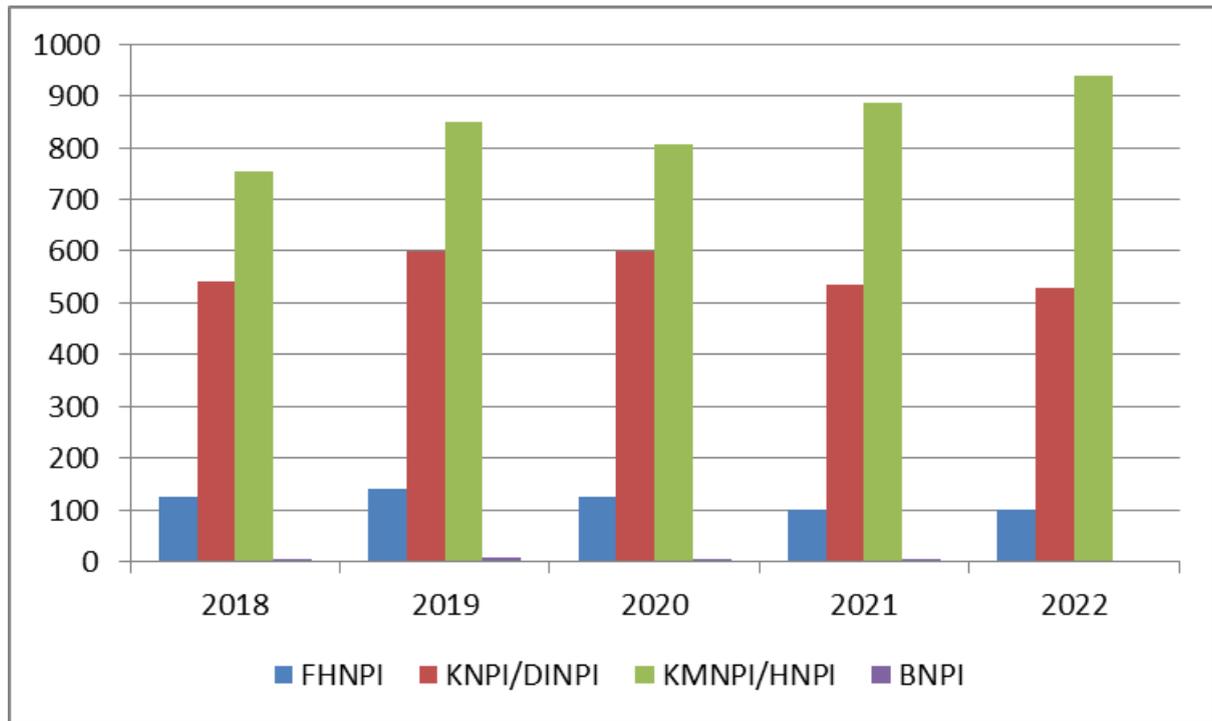
No. immature males: _____

Trend: Declined by ___% over the last 10 years

Stable

Increased by ___% over the last 10 years

⁶ Only for countries where the species occurs regularly.



For countries where the species occurs only occasionally, please give the details of known observations within the reporting period: **Not relevant.**

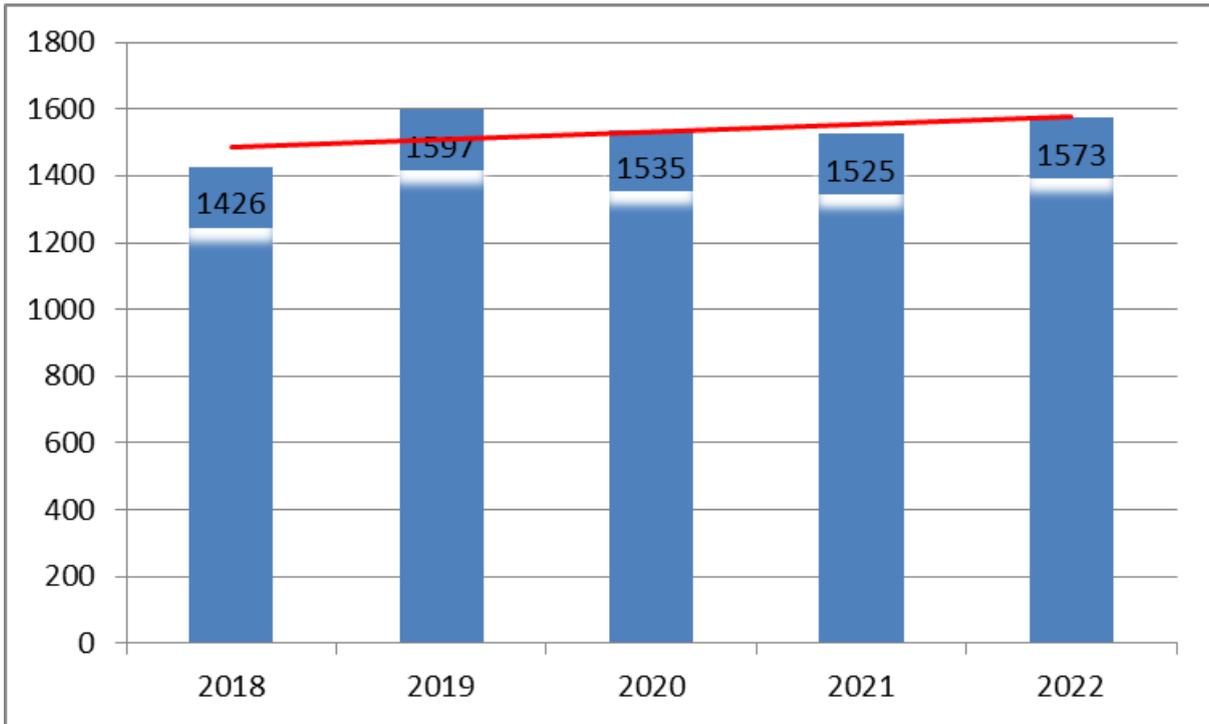
The estimation of the population-size, based on monitoring data shows a general increase in short (reporting period) and a moderate decline in mid-term (10 years):

The trends of the 3 main GB sub-populations show an obvious connection between within the country and trans-border populations as well. Possible reasons of re-arrangement of GB populations:

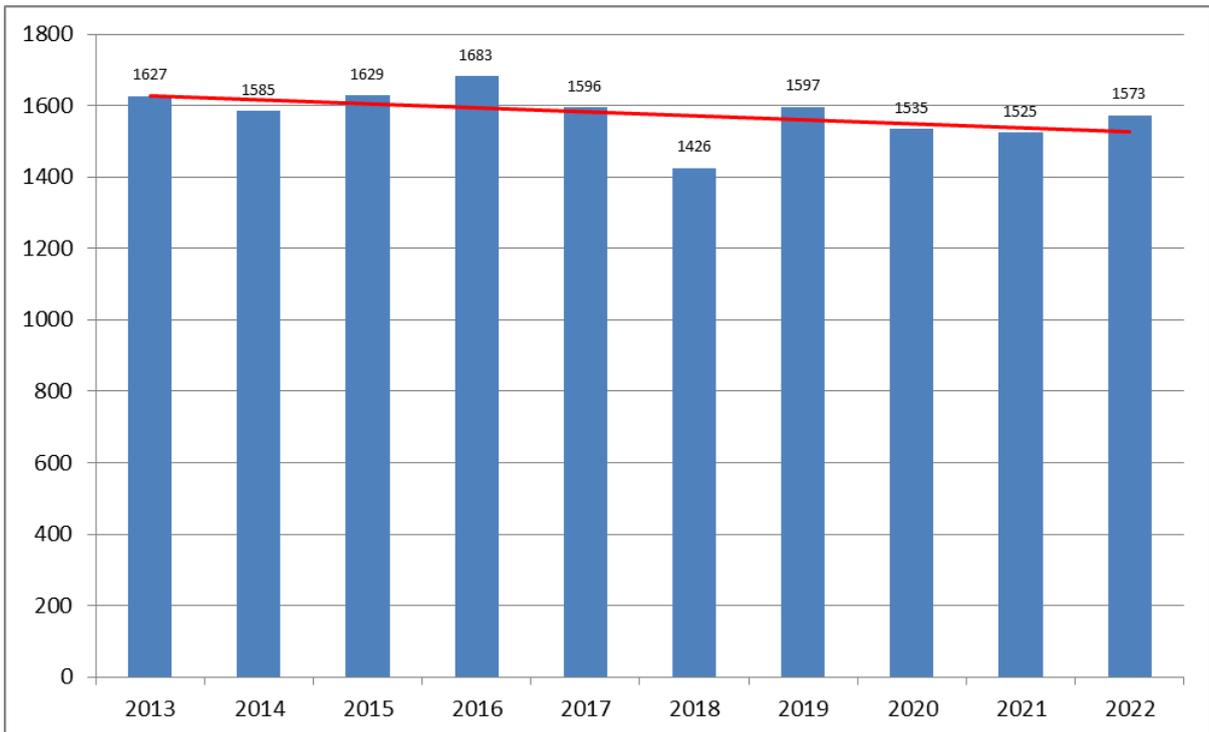
Western Hungary: as part of the West-Pannonian population the relatively heavy decline (20%) indicates the allocation to the Austrian GB sites instead of the loss of the birds. The main reasons of natural **translocation** could be the changes of habitat structure (temporary decline of followland) and **intensive spread of irrigation.**

Central Hungary: a moderate decline (around 10%) can be linked to the deficiency of monitoring (lack of experienced staff, shortage of personnel), but also a natural translocation of the birds to the eastern parts of Hungary. However **significant improvement** has been reached both **in habitat and predator management**, the characteristics of the meta-population system might have resulted in a conspecific aggregation at the eastern part (core area) of Hungary.

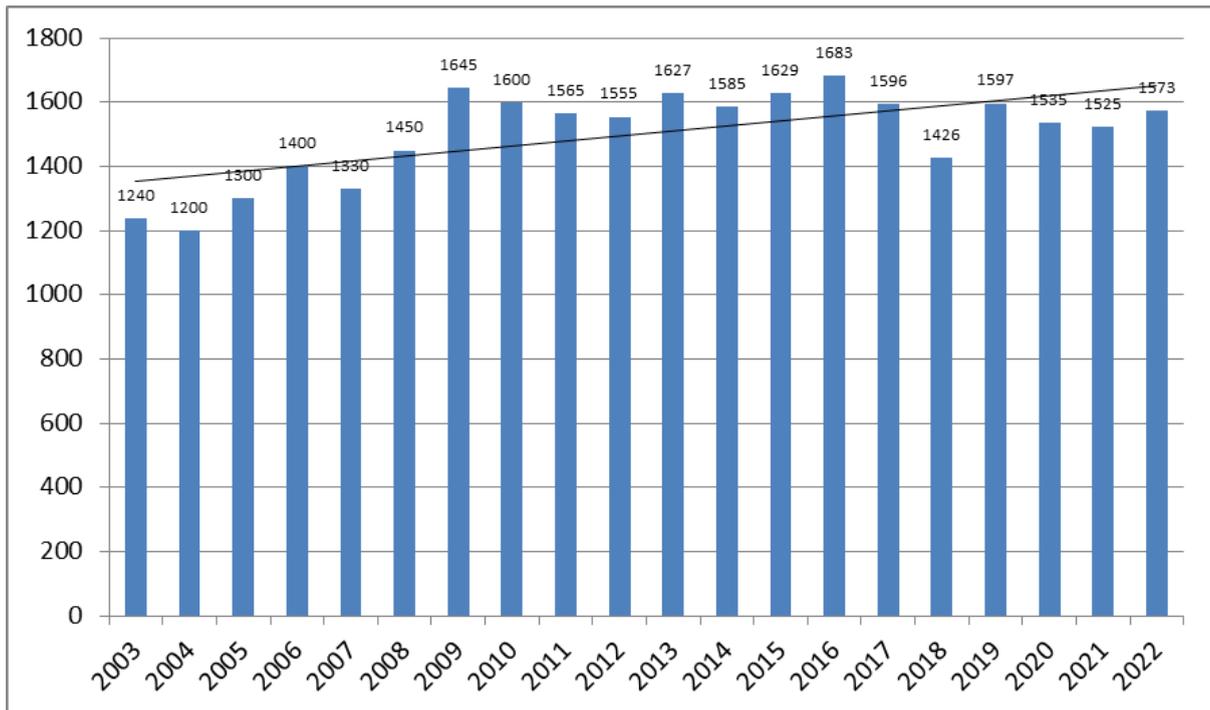
Eastern Hungary: a massive increase (15%) is shown during the reporting period thanks to various reasons. The connection between the Central Hungarian sub-populations is proven by telemetry data provided by loggers used within the LIFE GreatBustard project (2016-2023), but also the condition on GB habitats were improved during the last 5 years.



The estimated GB population in Hungary between 2018 and 2022



The estimated GB population in Hungary during the last 10 years between 2013 and 2022



The estimated GB population in Hungary during the last 20 years between 2003 and 2022

6.2. Monitoring of the effects of habitat management.

Is the effect of habitat conservation measures monitored in your country?

Yes Partially No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published.

1. Spakovszky, P. & Raab, R. 2020. Impact of agriculture irrigation on the habitat structure and use by Great Bustard (*Otis tarda*) in a Natura 2000 site. – *Ornis Hungarica* 28(2): 74–84. DOI: 10.2478/orhu-2020-0018

https://www.researchgate.net/publication/346732941_Impact_of_agriculture_irrigation_on_the_habitat_structure_and_use_by_Great_Bustard_Otis_tarda_in_a_NATURA_2000_site

2. Szenek, Z. & Végvári, Zs. 2018. Habitat selection of the Great Bustard (*Otis tarda*) in Körös-Maros National Park. – *Ornis Hungarica* 26(1): 89–94. DOI: 10.1515/orhu-2018-0006

[http://www.ornis.hu/articles/OrnisHungarica_vol26\(1\)_p89-94.pdf](http://www.ornis.hu/articles/OrnisHungarica_vol26(1)_p89-94.pdf)

What can be learned from these studies?

1. As the whole Palearctic steppe system, its iconic bird, the Great Bustard has also suffered from the expansion of intensive agriculture. The species now typically has stable or growing populations only in protected areas, but negative processes are still prevalent even there. In this study, we present a recent change in a part of the Natura 2000 site designated for the isolated West Pannonian population. In recent years, a total of 2.3 km² Center-pivot and laterally moving linear irrigation systems have been built and 4.7 km² of underground pipelines have been laid, with which more than 52% of the 1245.5 ha study area was irrigated by 2020. In comparison to 2009, when the study period started, the sown area of autumn cereals, one of the main breeding habitats, was roughly halved and the proportion

of crops unsuitable for breeding was increased. New crops requiring irrigation have emerged with a rate of 30.6% in the last year. Despite the available support, the area of alfalfa, which is the most significant breeding habitat, and is grown almost exclusively in the agri-environmental scheme, has decreased. As a result of habitat degradation, the number of Great Bustard females observed in the area in spring decreased to a small fraction of the beginning. Irrigation farming is expected to increase, as a response to the climate change, but in order to save agro-steppe habitats and their species, the adverse effects of agricultural intensification need to be urgently addressed at both local and European levels. (Abstract of the study)

2. The authors investigated relationships among bustard presence data as response as well as properties of habitat patches such as shape, size, type of land use and landscape connectivity in 2015, employing bustard occurrence data in Körös-Maros National Park. The habitat structures preferred by the Great Bustard are available within the framework of AE schemes.

What are the remaining gaps and what measures will your country do to address these gaps?

6.3. Comparative ecological studies.

Have there been any comparative studies carried out on the population dynamics, habitat requirements, effects of habitat changes and causes of decline in your country in collaboration with other Range States?

Yes No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published

1. Lénárt-Janó G., Szél A. I., Lengyel T. 2022: Egyedileg jelölt túzokok (*Otis tarda*) visszafigyelési eredményei a Tiszántúlon In: Crisicum 2022

http://real.mtak.hu/161838/1/109_120_Lenart_Crisicum12_2022_A.pdf

2. Faragó S (2019) Spectrum of plant and animal diet of european great bustard (*Otis tarda tarda*) – An overview. *Ornis Hungarica* 27:62–84.

<https://doi.org/10.2478/orhu-2019-0004>

What can be learned from these studies?

1. Great Bustards reared at the rescue station at Körös-Maros NPD were marked before their release to enable future identification for collecting data on the released individuals. More than 42% of the birds observed survived their first winter. Males were observed at a distance of 33 km, 43 km and 48 km from the repatriation site, confirming that GBs form one metapopulation in the Trans-Tisza region.

2. 272 plant and 217 animal, altogether 489 taxa were identified in the diet of the Great Bustard, on the basis of data from 9 (10) countries: Portugal, Spain, UK, Germany, Austria, Slovakia, Hungary, Ukraine, Kazakhstan, former Soviet Union. Out of the 272 plant taxa, 40 were classified as cultivated plants, 232 as wild plants and weeds. Animal food is shared among Annelida (3), Arthropoda (189) Mollusca (2) and Vertebrata (23) phyla. Arthropods are mostly represented with Insecta (181). The high number of taxa and the wide spectrum indicate that the GB is a generalist with positive adaptation ability, being able to find food

even in intensive agricultural areas.

What are the remaining gaps where the Memorandum of Understanding could assist?

6.4. Studies on mortality factors.

Are the causes of Great Bustard mortality understood in your country?

X Yes Partially No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published.

No new studies in the reporting period, however, there are several studies listed in the previous reports.

What can be learned from these studies?

What are the remaining gaps and what measures will your country do to address these gaps?

6.5. Investigation of factors limiting breeding success.

Are the factors limiting breeding success in core populations understood in your country?

Yes Partially No Not applicable⁷

Please, provide a list of on-going and completed studies with references if results are already published

No new studies in the reporting period, however, there are several studies listed in the previous reports.

⁷ Only for breeding countries.

What can be learned from these studies?

What are the remaining gaps and what measures are you going to take to address these gaps?

The most important remaining gap at reducing the mortality caused by agriculture is the lack of supporting farmers applying for agri-environmental support (see chapter 1.2)

Selling state-owned land outside of the protected areas resulted in an unfavourable situation on several sub-populations in Hungary. Key breeding sites for example in the Kiskunság and the Moson Plain were sold with uncertain conditions for the management requirements.

6.6. Studies on migration.

Were there any studies on migration routes and wintering places carried out in your country?

Yes **Partially** No Not applicable¹

Where are the key sites and what is the size of the population they support?

In Hungary the GB population is resident, but smaller movements within and between the sub-populations are regular.

Do you have any knowledge about the origin of these birds supported by ringing or other marking methods?

The origin is known in the case of released juveniles, raised at the Rescue Center in Dévaványa (KMNPD) and in the case of wild chicks caught for tagging. During the reporting period, a significant number of birds were equipped with GPS tags in the frame of the LIFE Great Bustard project.

2017: 2 released juv (1 died in 2021 (predation), 1 stopped in 2020)

2018:

- 2 ad female (1 died in 2019 (predation), 1 stopped in 2022)
- 4 wild juv (1 died in 2018 (predation), 3 active in 2023)

2019:

- 2 wild juv (died in 2019 (predation))
- 2 released juv (died in 2019 (predation))

2020:

- 8 wild juv (6 died in 2020 (3 predation, 2 likely illness, 1 accidental drowning), 1 died in 2021 (collision with power line), 1 died in 2023 (collision with electric fence)
- 2 released juv (1 died in 2023 (predation), 1 active in 2023)

2021:

- 8 wild juv (7 died in 2021 (3 predation, 1 likely predation, 1 trauma and shock, 1 accident, 1 mowing), 1 GPS tag removed)

2022:

- 8 wild juv (3 died in 2022 (2 predation, 1 disappeared), 5 active in 2023)

Altogether 38 birds provided data, out of which 36 birds were actually tagged in the reporting period (2018-2022).

Collection and assessment of data is still ongoing.

What are the remaining gaps and what measures will your country do to address these gaps?

More tagging is foreseen in future projects. Existing data is being analyzed.

7. Training of staff working in conservation bodies

Is there any mechanism in place in your country to share information on biological characteristics and living requirements of Great Bustard, legal matters, census techniques and management practices to personnel working regularly with the species? **X Yes**
 No Not applicable¹

If yes, please describe it.

In Hungary a "Great Bustard Conservation Working Group" has existed since the early 1990s. The group comprises about 25 experts working at different nature conservation organisations (rangers and other NPD staff, researchers, NGOs, ministry and inspectorate staff) in different parts of the country. These experts exchange experiences by informing each other on relevant population and nature conservation issues concerning the species during the regular, in-person or virtual meetings of the Working Group.

Have personnel dealing with Great Bustard participated in any exchange programme in other Range States? **X Yes** No Not applicable¹

If yes, please give details on number of staff involved, country visited and how the lessons were applied in your country.

See Chapter 5 for cross border conservation measures.

Members of neighbouring countries are regular participants of the Great Bustard Working Group's meetings in Hungary.

The LIFE Great Bustard project requires regular visits between Austria and Hungary for the GB experts involved.

8. Increasing awareness of the need to protect Great Bustards and their habitat

What measures have been taken to increase the awareness about the protection needs of the species and its habitat in your country since signing the Memorandum of Understanding?

The GB conservation program and the species itself is in the focus of interest in Hungary. At all GB habitats the stakeholders and the general public are regularly informed via common instruments like meetings, guided tours, leaflets, information boards.

The website <https://www.tuzok.hu/> can be regarded as the Hungarian information hub for GB protection. (available in English)

Two events were regularly organized during the reporting period at the Visitor Center at Dévaványa (<https://www.kmnp.hu/hu/sterbetz-istvan-tuzokvedelmi-latogatokozpont>):

- Great Bustard Festival (since 2017): open day about nature protection
- GB Trail (since 2021): trail running race and cycling tour

Within the framework of the LIFE Great Bustard project a significant part is focusing on awareness raising. A GB education and visitor center has been established in the Kiskunság area.

Regional cooperation started within the LIFE GB project between hunters and NPDs, which was a huge step (and partial success) for nature and GB conservation. The joint action is the predator management implemented on GB habitats, which is beneficial for both small game management and GB conservation.

See more on awareness raising in Chapter 2.2 Prevention of Disturbance.

Do farmers, shepherds, political decision makers and local and regional authorities support Great Bustard conservation? **Yes** Partially No

What are the remaining gaps or problems and how are you going to address them?

In general the acceptance of GB and its conservation program is on average throughout Hungary. More intensive communication with the general public and with stakeholders, especially farmers and hunters, is necessary. Sustainable, nature-friendly management practices that contribute to the preservation of the natural diversity of agricultural areas are presented in the 9-part short film series, commissioned by the MME/BirdLife Hungary and produced by Filmdzsungel Studio in the Austrian-Hungarian cooperation in the framework of the ongoing (2016-2023) LIFE project, "Cross-border protection of the Great Bustard in Central Europe".

<https://www.tuzok.hu/content/eredmenyek-jelentesek>

(English subtitle is available)

9. Economic measures

Have there been any initiatives taken to develop economic activities that are in line with the conservation requirements of Great Bustard in your country?

Yes **Partially** No Not applicable¹

What percentage of the population is covered in total by these measures?

All (>75%)

Most (50-75%)

Some (10-49%)

Little (<10%)

None

Not applicable

How effective were these measures?

Effective (more than 50% of the targeted area is managed according to the species' needs)

Partially effective (10–49% of the targeted area is managed according to the species' needs)

Ineffective (less than 10% according to the species' needs)

Not applicable¹

Economic measures supporting GB conservation consist of the AE schemes described in Chapter 1.2.

10. Threats

Please, fill in the table below on main threats to the species in your country. Use the threat scores categories below to quantify their significance at national level. Please, provide an explanation on what basis you have assigned the threat score and preferably provide reference. Add additional lines, if necessary.

Threat scores:
Critical: a factor causing or likely to cause **very rapid declines** (>30% over 10 years).
High: a factor causing or likely to cause **rapid declines** (20-30% over 10 years).
Medium: a factor causing or likely to cause relatively **slow, but significant, declines** (10-20% over 10 years).
Low: a factor causing or likely to cause **fluctuations**.
Local: a factor causing local declines but likely to cause **negligible declines at population level**.
Unknown: a factor that is likely to affect the species but it is unknown to what extent.

Threat name	Threat score	Explanation and reference
Habitat loss	critical	
Losses of eggs and chicks	high	
Predation	high	
Collision with power lines	high	
Human disturbance	medium	
Pesticides	high / unknown	
Illegal hunting	not relevant	
Others (specify) 1.disturbance (eagles) 2.climate change 3.insufficient conservation measures (HNPI) 4.decreasing nature conservation legislation (HNPI)	1.medium, locally high (increasing) 2.low (increasing) 3.medium 4.medium	

PART II. COUNTRY-SPECIFIC ACTIONS

Please report on the implementation of the country-specific actions listed for your country in Part II of the Action Plan and provide information if that is not already covered by your answers under Part I. Please describe not only the measures taken but also their impact on Great Bustard or its habitat in the context of the objectives of the Memorandum of Understanding and the Action Plan. Where you have already answered on country-specific actions in Part I, please only add a reference to the relevant answer here.

Not relevant.