



CONVENTION ON MIGRATORY SPECIES

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FIRST MEETING OF THE SIGNATORIES TO
THE MEMORANDUM OF UNDERSTANDING
CONCERNING CONSERVATION AND RESTORATION
OF THE BUKHARA DEER (*Cervus elaphus bactrianus*)
20 November 2011, Bergen, Norway
Agenda Item 5.0

OVERVIEW REPORT

(Prepared by WWF Central Asian Programme on behalf of the CMS Secretariat)

1.0 Introduction

1. Pursuant to paragraph 5 of the MoU, the Secretariat shall prepare an overview report compiled on the basis of information at its disposal pertaining to the Bukhara Deer (*Cervus elaphus bactrianus*).
2. National reports of the Signatories are the primary source of information for the overview report. In June the Secretariat invited the MoU Range States and collaborating organizations to submit their national reports to the Secretariat. As of 25 October 2011, Kazakhstan, Tajikistan and Uzbekistan had done so. This report is largely based on these reports as well as on other information available to the WWF such as data and project reports, conference proceedings, scientific and grey literature.

2.0 Conservation Status of the Bukhara Deer

3. There is evidence that after the previous severe decline, the global Bukhara deer population has stabilized since 2002 and an increasing trend is observed for all populations. According to regular monitoring of the majority of Bukhara deer populations conducted in the framework of WWF projects, population trends from 2002 till 2010 are as follows:

Kazakhstan: 200- ~400, increasing trend;

Tajikistan – 60 – 210 – stabilized/ increasing;

Turkmenistan – 90- 120 - stabilized/ slightly increasing; and

Uzbekistan – 330 – ~ 900 – increasing, with an overpopulation in Badai-Tugai and ongoing threats of degradation of the ecosystem and as well as to the population itself.

Table 1. Population trends of Bukhara deer

	Year (data for September-October)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
U Z B	Badai-Tuagai NR	~100	120	140	150	160	220	250	265	316	346	374 37% juv	517 2% juv +30 in pens
	Kyzylkumskii NR	76	40	75	80	95	120	80	110	120	120	130	~130
	Other territories	~50	~50	~50	~50	~60	~90	~90	~90	~100	~100	~100	~140-180
	Zarafshan - reintroduction	9	10	14	18	20	23	26	32	33	39	46	~30-32? (+22 in pens)
	Subtotal	~190	180	240	330	385	450	480	490	560	600	700	~900
K A Z	Karatchingil	80	100	150	~200	~250	~250	280	300	>300	>300	320-350	350
	Turkestan (S-D)	0	0	4	6	8	10	12	15	19	22	34	18 (+22 in pens)
	Subtotal	80	100	150	~200	~250	250	280	300	280	350	370	390
T U R K	Middle reaches of A-D (7 sites)	30	35	35	45	50	60	70	80	94	106	100	60-70
	Djazguzer (A-D upper reaches)	~20	~25	~35	45	~50	~50	~50	~50	~50	~50	~50	~50
	Subtotal	50	60	70	90	100	110	120	130	140	150	150	120
T A J	Tigrovaja balka					80	>50	>50	>50	>80	>140	>150	>150
	Zarafshan (upper reaches)					25		35	35	40	60	60-65	60-65
	Subtotal	?	?	?	60	~100	?	~100	~100	120	200	210	210
BD in the Region TOTAL		~350	400	500	650	800	850	>900	1000	1100	1300	1430	1620

S-D – Syrdaria river valley; A-D – Amudaria river valley

4. The high level of fragmentation of the distribution area prevents the deer from naturally expanding their range and a further growth of the population numbers. However, in some parts of the distribution area, especially in the Amudaria river valley, long and high-level floods forced the animals to migrate numerous times during the reporting period (from 2002 until 2011) out of their natural habitat. As the animals were increasingly hunted outside those areas, this was the major reason for temporary population decreases (for instance, in the Kyzylkumskii Nature Reserve in 2005). It also shows that there is an exchange of animals between the subpopulations of the middle Amudaria.

5. Bukhara deer occur in a number of populations. The majority of them is located in small subpopulations in the spots of riparian forests along the Amudaria river valley. Natural populations occur in the following areas along the Amudaria:

- (1) Upper reaches: Tigrovaja balka in Tajikistan (bordering Afghanistan); Djazguzer in Turkmenistan; Maimun-tugai (river part of Surkhanskii reserve) in Uzbekistan.
- (2) Middle part of Amudaria: Kyzylkumskii Nature Reserve in Uzbekistan and Amudarijinskii Nature Reserve and non-protected sites of riparian forest (seven in total) in Turkmenistan.
- (3) In the 1970s, Bukhara deer populations have been reintroduced in the lower reaches of Amudaria (Badai-tugai) and its adjacent small sites of riparian forests.

Outside of the Amudaria river valley, reintroduced populations of Bukhara deer can be found in the following areas:

- (1) Zaravshan river valley in Tajikistan (reintroduced in 1970s) and Uzbekistan, Zarafshanskii Nature Reserve (reintroduction during the reporting period).
- (2) Ily river valley, Karatchingil (reintroduced in 1970s).
- (3) Middle reaches of the Syrdaria river valley in the Turkestanskii region (reintroduction during the reporting period).

Subpopulations of the upper Amudaria

6. An exact census of the sub-populations in Uzbekistan and Turkmenistan was never conducted as the populations inhabit territories between engineering systems of state borders and access to these territories is difficult. Some periodic estimates of experts suggest a stable population or even slight growth. Currently, there are no data available on the population status in Afghanistan.

7. The largest natural population of Bukhara deer inhabits the Tigrovaja balka Nature Reserve (NR) in Tajikistan and adjacent spots of riparian forests of the right banks of Piandj. In the 1960-1970s the population reached its optimum with 350-400 animals, which is the carrying capacity of the habitat. Deer from Tigrovaja balka were used as a source for reintroduction in various other sites of the historical range of the species, as well as for introduction and the establishment of reserve groups in suitable conditions in mountain areas. All populations in Tajikistan, including those in Tigrovaja balka and adjacent riparian forests of the Piandj seriously suffered during the period of civil conflicts in the 1990s. Furthermore, breaks of the water supply regime caused serious damage to the habitat. During the last 10-12 years the situation is improving and since 2007 the water regime in Tigrovaja balka has greatly improved due to a project undertaken by WWF/MFA Norway, and a stabilization and slight growth of the Bukhara deer population were registered. Tajikistan reports that there are 130-140 deer in Tigrovaja balka NR, and in the riparian forests of the right bank of the Piandj – 20-24 deer in the Farkhorskii region, 16-18 deer in the Khamadonijskii region.

Subpopulations of middle Amudaria

8. Both in Turkmenistan (Amudarijinskii NR) and in Uzbekistan (Kyzylkumskii NR), proper protection of the populations was ensured by a long-term WWF project (2000-2008). The populations are stable with an increasing trend. There are indirect signs that some animals migrate from one riparian forest area to another, also crossing the river between Uzbekistan

and Turkmenistan depending *inter alia* on water level fluctuations. During years with very high and long-term flooding (1.5 meter increase in the water level over up to three months), deer migrate to the surrounding deserts, which are located outside of the protected areas, and only a few of them return. The Amudaria basin inspection (established by Gosbiokontrol in Uzbekistan, with support of WWF) ensures periodical and mobile anti-poaching control in the Uzbek part of the river valley, but they do not extend their surveillance into the desert where the deer migrate.

9. For a long period (since the establishment of Kyzylkumskii NR) an island in the middle of the Amudaria river was subject to territorial conflict between those two countries. Deer regularly migrated to the island, especially males at the end of the rutting season. The administration of the Kyzylkumskii Nature Reserve tried to ensure the protection of this territory, while disturbance from the Turkmen side of the river (cow grazing) prohibited a stable development of the population. In the 2006-2007 the island was finally assigned to the Amudarijinskii NR in Turkmenistan, which solved the problem, as Turkmenistan established proper protection of the territory.

Lower reaches of Amudaria.

10. The Badai-tugai population reached its maximum optimum in 2006-2007. Currently, the area is overpopulated, exceeding its carrying capacity. No reproduction is registered in this population and the degradation of the ecosystem is a serious threat to the long-term health and survival of the species in that area. Natural expansion of the area is only possible to a very limited extent because of the few riparian forest areas in the surroundings. The forests are surrounded by open rocky deserts and settlements, and deer would not be able to migrate more than 50 km in such unfavourable surroundings. The fragmentation of the deer's critical forest habitat constitutes a serious threat for the species. According to special surveys, a number of areas of riparian forests in the vicinity of the previous Amudaria delta, the Pri-Arali'e, are suitable for Bukhara deer. Urgent measures need to be undertaken for translocating some of the Bukhara deer to these sites in order to establish additional sub-populations. Infrastructure for deer adaptation after translocation is already prepared in one of the sites that seem most suitable.

Zaravshan river valley

11. This transboundary population is divided into two sup-populations, one in the Zarafshanskii sanctuary in Tajikistan, where deer were reintroduced in the 1970s, and the other one in Zarafshanskii Zapovednik (Nature Reserve) in Uzbekistan. According to the data of the national report of Tajikistan, there are 20-24 deer on the Tajik side. But the results of surveys conducted in the Tajik population at the border with Uzbekistan shows more optimistic figures: up to 60-65 animals. Most probably, the majority of the animals stay in the area between the engineering systems between the state borders and they are more visible from the Uzbek side.

12. In Uzbekistan, preparations for deer reintroduction in the Zarafshanskii NR were initiated before the reporting period (1995-97, through WWF project support from 1999 until 2010). A two first groups of in total ten animals was released in 2005 and 2007 (four more animals escaped from the pen). There were 21 deer in the pens and 20 animals in the free ranging group in 2009. Unfortunately no more animals were released after 2007. There are still 22 animals in the pens with a mortality rate practically equal to the birth rate. Estimates

suggest that there are about 30 deer in the wild. However, several cases of poaching, illegal logging and grazing inside of the reserve have been registered.

Ily river valley

13. Bukhara deer disappeared in the riparian forests of the Ili River in the middle of the previous century. A group of deer was brought from Ramit to Karatchingil at the beginning of the 1970s to a special state game management area, which includes the riparian forests of the left bank of the Kaptchagai water reserve in the middle reaches of the Ily. After some years of adaptation, the population developed well and more than doubled during the reporting period. The area is very limited and fenced, but the deer (as well as all other ungulates) received winter feeding, so no ecosystem degradation is registered.

14. There is anecdotal information that some deer jump over the fence and expand their range to the surrounding riparian forests of the left bank of Kaptchagai water reserve and the Ily River. But there are no exact data on deer numbers and distribution and according to oral information the majority of these animals are poached. Suitable habitats on the right bank of Ily are still not inhabited by deer, although five deer from Karatchingil were released into the riparian forest part of Altyn-Emel National Park (WWF project). But the male died, so there will be no reproduction and population growth until the new translocation is completed, or some animals migrate from the left bank.

Syrdaria river valley

15. Bukhara deer had been numerous in the riparian forests of Syrdaria, but disappeared from the fauna of the region in 1962. Deer reintroduction was initiated in the Turkestanskii region, the middle reaches of Syrdaria, during the reporting period. The first group was released in 2009 (WWF project), an additional group was translocated directly from Karatchangil and released in 2010 (FHC MAg RK). Recently there have been 18-20 free-ranging deer and 22 deer in the pens, with additional releases being planned.

Sites of the species introduction in 1970s

16. A number of Bukhara deer groups were established in the mountain valleys of Tajikistan in the 1960s. The most successfully developing group in the Ramit Nature Reserve reached a population size of 200-250 animals and was used as a source for further reintroduction in the 1970s (Karatchingil in Kazakhstan; Badai-tugai in Uzbekistan). Recently there have been no registrations of deer in Ramit (the population was practically eliminated during the period of civil conflict) and there is no information available on the Karatag group. There are 6-7 deer in Dashty-Djum sanctuary and 12-15 in Sarykhsor forestry.

3.0. Implementation of the Action Plan.

17. This section provides a brief summary on the progress towards the implementation of the MoU and the Action Plan. The information provided is based on the national reports of the signatory countries, but also includes data from other sources, stakeholders and activities.

18. *The MOU.* The Bukhara deer MoU was signed by Tajikistan, Kazakhstan, Turkmenistan, the CMS Secretariat and WWF during a special event of a meeting of the Inter-State Sustainable Development Commission (ISDC) in Dushanbe, Tajikistan, on 16 May 2002. The Ambassador of the Republic of Uzbekistan in Germany signed the MoU on

18 September 2002, and the International Council for Game and Wildlife Conservation (CIC) signed the MoU as a cooperating organization at 26 September 2002.

19. ***International agreements.*** No additional international agreements were developed nor signed to support MoU implementation.

20. ***Habitats.*** The Action Plan under the MoU does not include a special component on habitat restoration. Nevertheless, the Government of Kazakhstan conducted various measures to restore important riparian forests in the Syrdarya river valley. They reduced the water take-off from Syrdaria and built a dam to separate the two parts of the Aral, which helped to restore the “Small Aral” to a great extent. In addition, gas for heating and cooking was provided to local communities in order to prevent them from illegally logging fire wood. In Tajikistan, the restoration of the water-supply regime in Tigrovaja balka made possible a great improvement in the habitats of Bukhara deer populations in Southern Tajikistan. This was achieved through a project initiated in 2005 with the support of WWF Netherlands, Minnesota Zoo, and the Disney Fund, and largely carried out in 2007-2011 in the framework of a WWF/MFA Norway project.

21. ***Restore range and numbers.*** Various activities were carried out during the reporting period, which in total resulted in the growth of deer numbers in the wild from 350 in 1999 and 500 in spring 2002 to up to 1,600 in autumn 2010. Deer were reintroduced in three sites of the former range (Zarafshan, Syrdaria and Ily). About 70-80 animals are currently still in captivity (22 in Zarafshan, 22 in Turkistan, about 35 in Badai-Tugai).

22. ***Examination and support of existing nature reserves inhabited by Bukhara deer populations.*** The examination was completed and minor technical support was regularly provided to the Amudarija Nature Reserve in Turkmenistan. WWF projects from 2000 until 2009 included support for the running costs for various activities (gas, spare details, etc.), purchase field and fire protection equipment, vehicles and motorbikes, establish border posts, rebuild ranger stations, and provide additional support to the staff of the protected area. In the Badai-Tugai, Kyzylkumskii and Zarafshanskii NR in Uzbekistan, WWF projects during 2000 until 2008 provided similar support to the protected area management and equipment as well as forage for captive deer. In Zarafshan protected area the system of pens for deer was finalized. In the Tigrovaja balka in Tajikistan, a joint project of WWF and the Large Herbivore Foundation provided minor support for field equipment for rangers and contributions to cover running costs during 1998 and 2002. Since 2007, the WWF/MFA Norway project covered some of the running costs, provided field equipment, a tractor, border signs fire protection equipment, sun batteries and assisted in natural forest restoration activities.

23. ***Inventory works in existing populations.*** Inventories were completed before the beginning of the reporting period and regularly during the reporting period with regular monitoring of the majority of populations (see Table 1). The majority of this monitoring was carried out in the frame of a project of the Large Herbivore Initiative in 2000, a WWF project in majority of the areas, and with funding from the Kazakh Government in Kazakhstan (Karachingil) starting in 2000 until today. In 2004, WWF with support of CMS carried out census in Uzbekistan and since 2006 surveys have been carried out in the middle and lower Amurdaria in Uzbekistan through a joint UNDP/GEF project in cooperation with WWF.

24. ***Development of an interstate econet (system of protected areas) which could support self-sustainable population development of Bukhara deer:*** A database, GIS and the scheme

of Econet were designed by a joint GEF/UNEP/WWF project in 2003-2006 for the entire region of Central Asia. It was approved by the relevant national Ministries and State Agencies as well as by the regional authorities (Inter-State Sustainable Development Commission for Central Asia, ISDC) as the base for protected areas and land use system development. An Agreement of Intention on the implementation of the transboundary Econet was signed between ISDC and WWF in 2007. WWF passed the Econet database and GIS to all relevant Governmental structures and various projects. Based on the bilateral agreements and rules of use, these are free of charge and can be used as a base for further development of Econet components in more detailed scales to facilitate practical implementation. Further development and model establishment of Econet clusters was initiated in the region: Lower reaches of Amudaria in Uzbekistan: GEF/UNDP; Middle reaches of Syrdaria in Kazakhstan: MFA Norway/WWF project; Tigrovaja balka and surrounding areas in Tajikistan: MFA Norway/WWF project.

25. ***Inventory works in deer habitats to identify areas still suitable for the deer.*** Inventories were completed on a large scale by the Econet project and in more detail within the frame of a GEF/UNDP project in the lower reaches of Amudaria, Uzbekistan. Further inventories were conducted in the various sites of the Uzbek part of Syrdaria (Gosbiocontrole and Committee of game management and PAs); in the middle and lower reaches of Syrdaria in Kazakhstan (MFA Norway/WWF project); and in the Ily-Balhash region (Institute of Zoology and the Forestry and Hunting Committee of Kazakhstan, with additional special surveys undertaken within a WWF project in 2010-2011).

26. ***Protected areas coverage*** slightly increased during the reporting period.

27. ***Kazakhstan:*** A special sanctuary (site for Bukhara deer reintroduction) was established in the Turkestan region in the South Kazakhstan oblast by the regional and state government of Kazakhstan with support from WWF. Additional protected areas are currently in the process of being established in the Syrdaria river valley (55,000 ha of the middle reaches of Syrdaria and three sites (65,000 ha) in the lower reaches). Further practical activities to establish PAs are included in the national programme of the Republic of Kazakhstan, "Green Development". Potential Bukhara deer habitats in the Ily-Balkhash region (in total about one million ha of wetlands) have also been put under protection during the reporting period (three sanctuaries established by the government of Kazakhstan). The status of the protected areas is expected to further improve; the area has been submitted by the Government of Kazakhstan for nomination as a new Ramsar site.

28. ***Uzbekistan:*** In September 2011 through a decision of the Cabinet of Ministers of the Republic of Uzbekistan, a new Lower Amudaria state biosphere reserve was established, with a total area of 68,717 ha. It includes the riparian forests of the Berunijskii and Amudarijinskii regions. There was an opportunity to expand the territory of Zarafshanskii Nature Reserve by adding neighboring territories of forestry departments with special funding by the UNDP Uzbekistan Small Grant Programme. Preliminary agreement was achieved both with the State Committee of Forestry and with the regional authorities. However, unfortunately, this activity was cancelled.

29. ***Tajikistan:*** The territory of the Tigrovaja Balka Nature Reserve increased when 11,000 ha were added mainly from the adjacent deserts, by the decision of the Government of Tajikistan in 2007. The process of approval by local administrations and the legal land allocation is in its final stage (WWF/MFA Norway project support).

30. **Turkmenistan:** A special regime of protection was extended on the territory of the Amudaria island between Kyzylkumskii (Uzbekistan) and Amudarijinskii (Turkmenistan) Nature Reserves.

31. **Restoration of the species in suitable habitats with special measures for protection and favourable conditions for reproduction:** Related activities are ongoing in Zarafshan (Uzbekistan) and in Turkistan-Kazakhstan. One release took place in Altyn-Emel, Kazakhstan.

32. A successful captive breeding programme was established in Zarafshan in Uzbekistan and in Turkistan-Kazakhstan in order to increase the number of deer and prepare groups for releases (with support of WWF). The activities in Zarafshan started earlier (there were already 18 deer in the pens in 2002) and were developing progressively; a significant number of deer was reached and the first releases were possible in 2004. In 2005, the permission was received to release the first group; the second was released in 2007. Unfortunately, permissions for additional releases were not obtained, and the rate of reproduction of the group went down because of the overpopulation of deer in the pens.

33. In Turkistan, the first four deer were transported to the system of pens in 2002 with support of WWF. However, the deer had to be evacuated to the Shimkent Zoo because of the threat of flooding. The system of pens was upgraded and deer returned after one year, but the two additional transportations led to a loss of a part of animals. However, once the animals adapted to their new surroundings, the number of animals increased greatly until 2008 (support within a WWF project and since 2007 with important support from the regional authorities). The first group was ready for release in 2009. An additional group was translocated directly from Karatchangil and was released in 2010 with governmental funding and management of the whole procedure.

34. **Reduce mortality:** Special technical support was provided to the rangers of the nature reserves that are inhabited by Bukhara deer through a WWF project. Special training sessions for rangers were organized (Turkmenistan, Kazakhstan), an evaluation/ competition of the work of the rangers accomplished (WWF and Committee of game management and protected areas of the State Committee of Forestry, Uzbekistan: rules were developed together by WWF and the Committee, the best rangers received special awards (WWF funding) - so all rangers were interested in working better). Special mobile anti-poaching Amudaria basin inspection was established and operational (Gosbiokontrol of the State Committee of Environment conservation of Uzbekistan and WWF).

35. **Legal protection measures.** Bukhara deer is included in the Red Data Books of all range countries, which means that they are strictly protected.

36. **Increase public awareness:** Various forms of activities were initiated in all countries of the region (WWF project), mostly with children (schools, ecological clubs): competitions of paintings and compositions, practical support (such as collecting acorns and/or brooms as the winter forage for deer in pens in Uzbekistan); kids ecological camps and “training of trainers”; preparation of special newsletters, exhibitions; various education materials were produced for kids of different ages and widely distributed in national languages; various performances were prepared by children for other schools and for adults. Education centers and exhibitions were organized in various protected areas (Zarafshanskii in Uzbekistan, Amudarijinskii in Turkmenistan, Tigrovaja balka in Tajikistan).

37. Information on Bukhara deer project activities was presented on the websites of CMS and WWF and a special site for the Tigrovaja balka reserve was established (<http://www.tigrovajabalka.tj/>). Videos devoted to Bukhara deer were prepared (NGO Eremurus, Uzbekistan) and dozens of publications in national and local mass-media, radio and TV broadcasts were devoted to Bukhara deer conservation in each of the countries every year. The book “Bukhara Deer in Uzbekistan” in Uzbek and Russian (supported by LHF/WWF) was published as well as a booklet devoted to the anniversary of Tigrovaja balka. Another booklet “Bukhara Deer – National Destiny of Uzbekistan”, was published in Uzbek, Karakalpak and Russian (within the framework of the UNDP project). Numerous scientific papers, reports on Bukhara deer biology and restoration were prepared and presented during various international conferences.

38. ***Economic measures.*** A set of small grants were provided to local communities within the framework of the WWF/MFA Norway projects in Kazakhstan (Turkistanskii region) and Tajikistan (surroundings of Tigrovaja Balka Zapovednik) in order to implement sustainable practices for using natural resources, to decrease anthropogenic pressure on the Bukhara deer habitats, and develop ways of alternative income generation for local communities (poaching prevention). The UNDP project in Uzbekistan tested technologies for the sustainable use of water and land resources and suggested them for wide replication. The project also included sustainable cattle and sheep breeding and alternative sources of energy generation.

39. ***Project on deer farming development.*** No activities were undertaken, although at least in Uzbekistan possibilities definitely exist (because of the overpopulation of deer in Badai-tugai).

Enhance international co-operation

40. ***Improve exchange of information and technical expertise.*** To some extent this was accomplished through a WWF project, which was implemented in Turkmenistan in 2000-2009, in Kazakhstan and Uzbekistan from 1999 until recently. In Tajikistan minor activities have taken place since 2000 but increased since 2005. A WWF representative regularly participates in the ISDC meetings as an observer and presents the results of the ongoing projects. Some information on the projects is also available at the WWF Russia website. CMS presented the WWF report and presentations held at a scientific workshop devoted to the 25-year anniversary of CMS in June 2004 on its website. In February 2011, a technical workshop in Astana, Kazakhstan addressed Bukhara deer conservation issues. Information on the restoration programme for Bukhara deer was submitted to the IUCN Deer specialist group and presented during a number of international workshops and conferences by the WWF Central Asia programme director and WWF project experts from the countries.

41. ***Raise funds for conservation programmes:*** In addition to regular funding provided by governments of the countries for the Nature Reserves inhabited by Bukhara deer, the following financial support could be secured during the reporting period:

- WWF Netherlands: about €50,000 per year for four countries in the region (from 2000 until recently).
- CMS: €900 in 2004 for deer census in Uzbekistan.
- Minnesota Zoo: US\$3,000 and US\$2,000 in 2005/2006 for ecosystem restoration in Tajikistan.
- Disney Fund: US\$5,000 and US\$15,000 in 2005/2006 for ecosystem restoration in Tajikistan.

- MFA/WWF Norway: NOK 150,000 – 120,000 per year for model Econet implementation in the historical distribution sites of Bukhara deer in Tajikistan and Kazakhstan from 2007 until 2011 (till July 2012).
- Large Herbivore Foundation: €3,000 in 2005/006 for the preparation and publication of the book “Bukhara deer in Uzbekistan”.
- UNDP Uzbekistan: GEF project “Conservation of riparian forests and improving of the system of protected areas in Amudaria delta, Karakalpakstan”, which included various activities beneficiary for Bukhara deer conservation and future restoration in the area of Amudaria delta.
- Government of Kazakhstan (National and regional (“oblast”) levels): targeted funding for taking care of animals in pens (Turkistan); targeted funding for providing additional groups of animals (catching, transportation, etc.) for release in the Syrdaria valley; establishment of a special sanctuary for Bukhara deer with a budget for staff and running costs (usually not allocated for sanctuaries); targeted funding for improving the system of pens for animals adaptation; establishment of a system of protected areas for Bukhara deer in the national programme for the next 3- to 5-year period (with targeted budget allocation).
- Government of Tajikistan: targeted funding for partial restoration of the infrastructure of the Tigrovaja balka in 2005 until 2007; and governmental decision on the allocation of the additional territory to the protected area.

42. **Threats:** In spite of the long-term implementation programme, the following threats are still relevant for Bukhara deer population development:

- fragmentation of habitats;
- degradation of habitats (even inside of protected areas in case of weak management);
- illegal logging, livestock grazing, fires, etc.;
- ecological disasters (floods / droughts), linked to the artificial regulation of the water regime and with the climate change;
- poaching, especially outside the protected areas.

43. **Priority actions:**

- follow-up on establishment of ecological networks and ecological corridors, which enable the deer to migrate and expand their natural range;
- further improve anti-poaching protection inside and outside the PAs;
- follow-up on reintroduction programmes, especially outside the main Amudaria river valley to ensure Bukhara deer survival in case of local ecological disasters in connected populations;
- urgent special measures for resettling a part of the Badai-tugai population to avoid further ecosystem degradation and serious threats of mortality;
- more attention should be given to the establishment of the groups of the species in isolated sites (e.g. apply the successful experience in Tajikistan to other areas), including deer farm development;
- socio-economic and community-based activities should be developed further, including ecological education, alternative forms of income generation for local communities, enhancing sustainable nature resource use;
- international cooperation and information exchange should be improved (including implementing special transboundary measures such as in the middle Amudaria in Uzbekistan and Turkmenistan; in the upper Amudaria of Afghanistan and Tajikistan; Zarafshan in Uzbekistan and Tajikistan; Syrdaria in Kazakhstan and Uzbekistan, etc.);

- initiate research on the distribution, population dynamics and conservation status of Bukhara deer in Afghanistan.

4.0 Evaluation

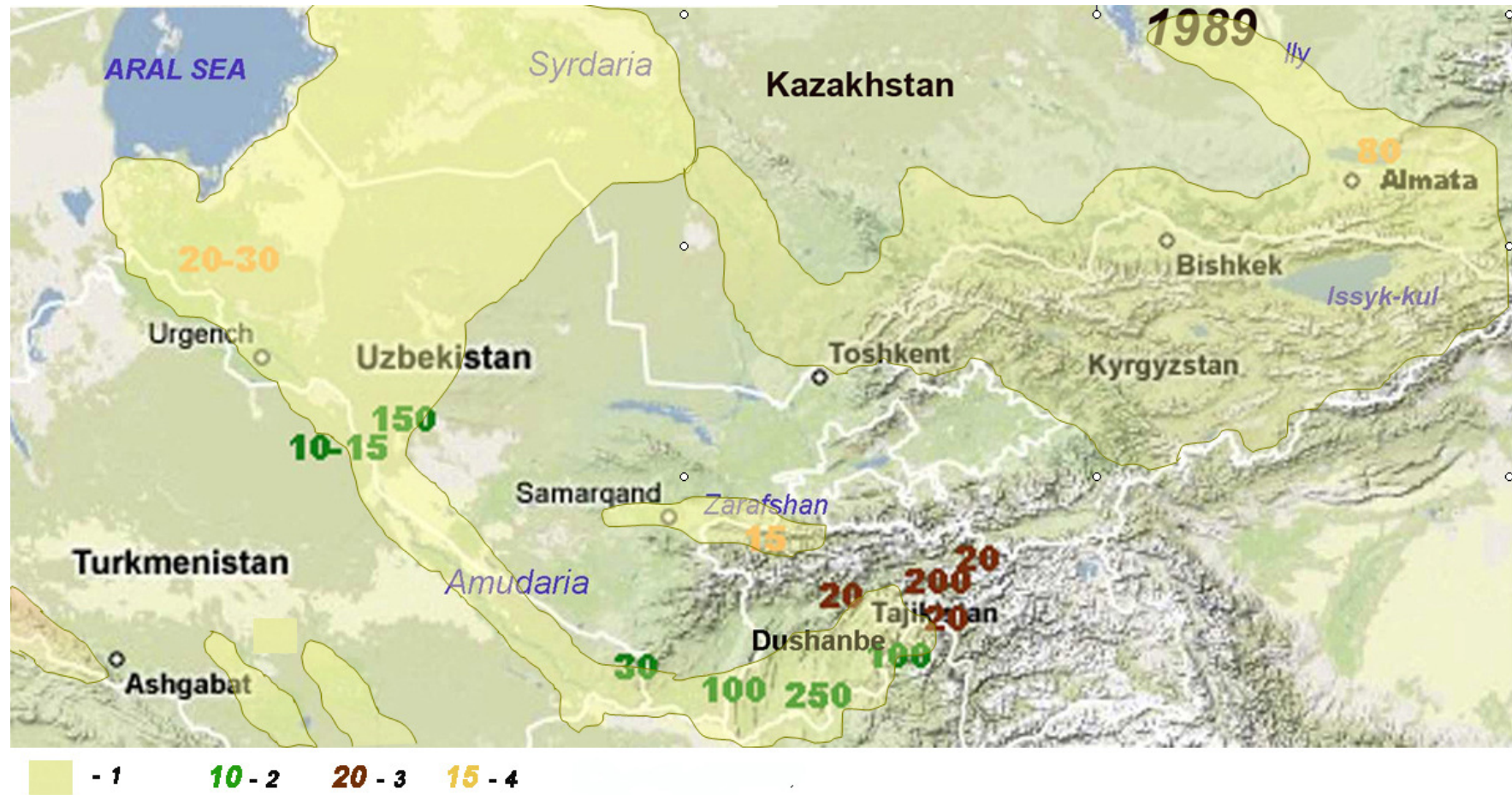
44. *Based on the synthesis of the national reports and other available information, the following achievements can be recognized:*

45. The conclusion can be drawn that as a whole the situation of Bukhara deer has stabilized, the majority of the populations are stable and growing: the total numbers of Bukhara deer increased from 350 in 1999, 500 in spring 2002 to up to 1,600 in autumn 2010. Initial measures for site restoration and reintroduction are being undertaken (Zarafshan, Syrdaria and Ily). Bukhara deer habitat restoration in Tajikistan can be considered as an important success for the implementation of the Action Plan through major support of WWF. A great deal of effort allowed to raise public awareness significantly on the situation of Bukhara deer in the countries of the region.

46. *Less progress has been achieved in the following fields:*

Nevertheless, additional measures are needed to improve the deer populations in Tajikistan; to follow-up on reintroduction in Zerafshan and to improve habitat conservation in this site. It would be useful to initiate reintroduction in new sites in Ily and Syrdaria river valleys. On the other hand, resettling of deer from Badai-tugai is urgent in order to prevent further population degradation and mortality of deer due to a variety of reasons.

Map 1. Bukhara deer distribution and numbers in various sites in 1989



- 1- historical area of Bukhara deer (after Heptner, et.al, 1961)
- 2- numbers of deer in natural populations
- 3- numbers of deer in introduced groups (mountain populations)
- 4- numbers of deer in reintroduced groups (natural habitats)

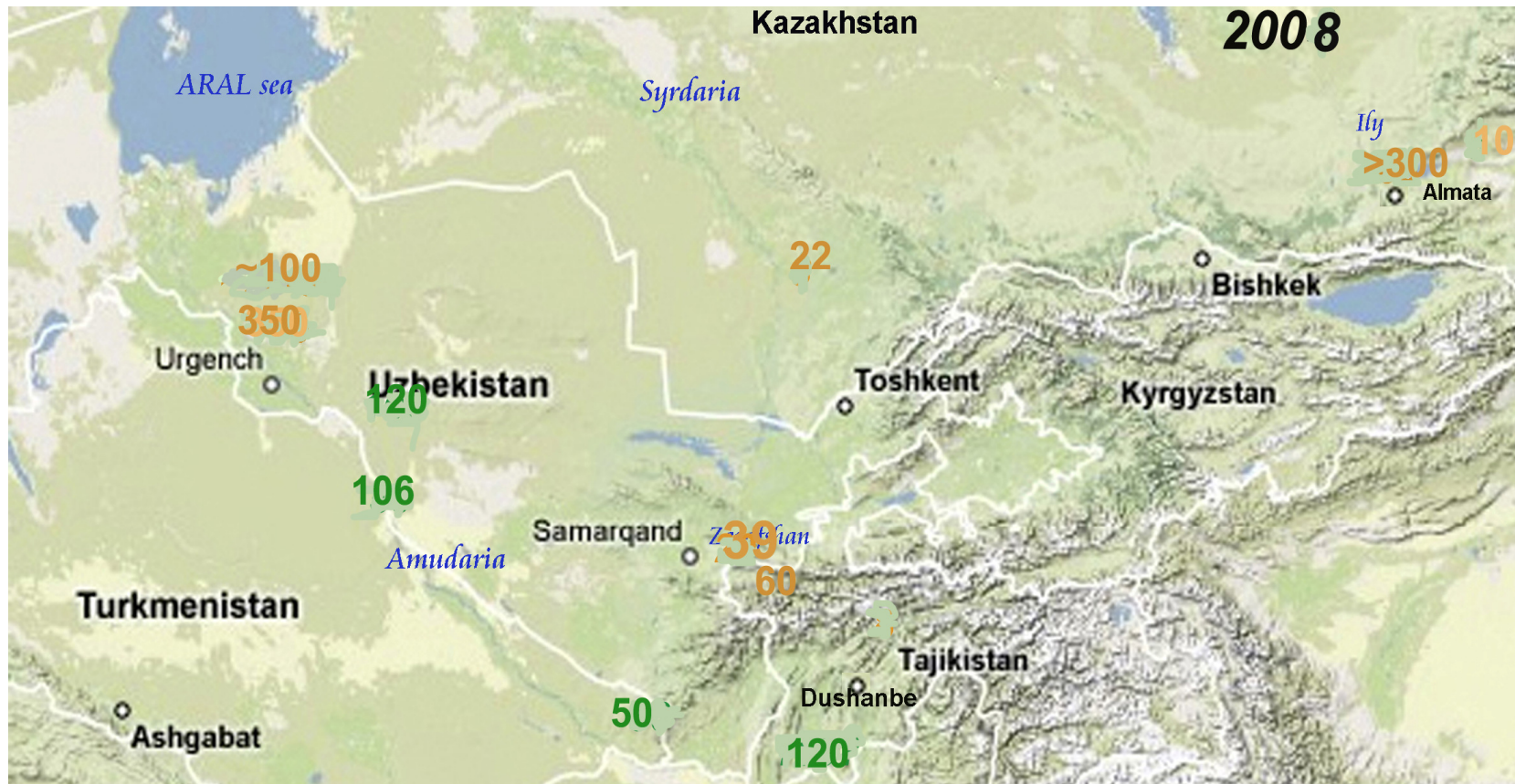
Map 2. Bukhara deer distribution and numbers in various sites in 1999



Map 3. Bukhara deer distribution and numbers in various sites in 2004



Map 4. Bukhara deer distribution and numbers in various sites in 2008



Map 5. Bukhara deer distribution and numbers in various sites in 2010

