

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

13 May 2011

3. Country:

Armenia

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Lake Arpi

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ; or
iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
ii) the area has been extended ; or
iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

No any major changes to the ecological character of the Ramsar site. The status of National Park was given in 2009 to the Ramsar site and adjacent territories.

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a **hard copy** (required for inclusion of site in the Ramsar List): ;
- ii) an **electronic format** (e.g. a JPEG or ArcView image) ;
- iii) a **GIS file providing geo-referenced site boundary vectors and attribute tables** .

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

Lake Arpi Ramsar site consists of 4 separate territories: 1/ Lake-reservoir Arpi, 2/ Alvar Sanctuary, 3/ Ardenis Sanctuary, Pond Ardenis, and 4/ Ardenis Sanctuary, wet meadow.

1/ The boundary of Lake-reservoir Arpi delineation is as follows (please, see the Map): a-b) Road around Lake Arpi from Village Shaghik to Village Paghakn from the North (which is also the boundary of Lake Arpi National Park); b-a) from Village Paghakn to Village Shaghik from the South by the horizontal 2025 m a. s. l.

2/ Alvar Sanctuary - the boundary of sanctuary.

3/ Ardenis Sanctuary, Pond Ardenis - the boundary of sanctuary.

4/ Ardenis Sanctuary, wet meadow - the boundary of sanctuary.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Approximate centres are as follow:

1/ Lake-reservoir Arpi - 41°03'00"N 043°37'00"E;

2/ Alvar Sanctuary - 41°03'30"N 043°42'50"E;

3/ Ardenis Sanctuary, Pond Ardenis - 41°04'40"N 043°42'50"E;

4/ Ardenis Sanctuary, wet meadow - 41°04'10"N 043°44'00"E.

Main coordinates: 41°03'N 043°37'E

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

Lake Arpi Ramsar site is situated in the north-western part of Armenia in Shirak Marz (province). The site is 168 km far from the capital city Yerevan, 43 km far from the provincial capital Gyumri and 11 km far from the nearest town Amasia.

10. Elevation: (in metres: average and/or maximum & minimum)

Minimum 1999 m a. s. l. (most western edge of Alvar Sanctuary; 41°03'20"N 043°45'20")

Maximum 2047 m a. s. l. (southern shore of Pond Ardenis; 41°04'30"N 043°42'60")

11. Area: (in hectares)

Total 3,230 ha, of which:

1/ Lake-reservoir Arpi – 2596.0 ha

2/ Alvar Sanctuary – 514.8 ha

3/ Ardenis Sanctuary, Pond Ardenis – 13.5 ha

4/ Ardenis Sanctuary, wet meadow – 105.6 ha

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

1/ Lake-reservoir Arpi. Several of the bird species reported for the Lake Arpi area are listed in the Red Data Book of Armenia whilst others are locally and internationally threatened. Total 163 bird species have been recorded in the area of which 80-85 are also nesting there, including Dalmatian pelican (*Pelicanus*

crispus) and Corn crake (*Crex crex*). Of special concern is the large breeding colony of Armenian Gull (*Larus armenicus*); 5,000-8,000 pairs are known to breed on the two islands, comprising 20-30% of the world population. Numerous bird species typical for Lake Arpi continue to suffer as a result from damming and enlargement of the Lake, untimely changes in the Lake's water table (water used for downstream irrigation), untimely grass cutting along the shorelines of the Lake, and the introduction of exotic fish and plant species.

The main use of Lake-reservoir Arpi is for irrigation downstream, fishery, mowing, pasture. The area is recognized as a globally important staging and breeding ground for migratory and resident bird species.

2/ Alvar Sanctuary. The gazttement of the Alvar Sanctuary is pending Government approval. The Sanctuary Alvar protects mostly ephemeral wetlands and oxbows formed along the former Akhuryan riverbed. The wetlands are man-made, which developed after the Akhuryan River was converted into an artificial channel built during the 1950s. The Alvar wetlands are characterized by high diversity in flora and fauna with numerous species registered by Armenia's Red List. The most prominent mammal species found in the Sanctuary is endangered (according to Armenian Red Data Book; near threatened according to IUCN Red List) European Otter (*Lutra lutra*). The wetlands provide critical breeding habitat to several wetland dependent bird species, including the Common crane (*Grus grus*), and important staging areas to migratory bird in fall and spring. The oxbow lakes are also the only sites for the Yellow water-lily (*Nuphar luteum*) in Armenia.

3 and 4/ Sanctuary Ardenis. The gazttement of the Ardenis Sanctuary is pending Government approval. The Sanctuary Ardenis protects the mostly ephemeral wetlands to the South of the Ardenis Community and the Ardenis Pond, which drains into the wetlands under protection. The wetlands provide critical breeding habitat to several wetland dependent bird species, the rare Common crane (*Grus grus*) being one of the more prominent summer residents.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1: Physical and ecological conditions are similar to other high-mountain lacustrine water-bodies, such as lakes Paravani, Khanchali (Georgia) and Childir (Turkey), which allows to consider Lake Arpi Ramsar site as representative near-natural wetland type found within the Caucasus biogeographic region.

Criterion 2: Up to 5-8 pairs of globally vulnerable (IUCN Red List) Dalmatian Pelican (*Pelecanus crispus*) are breeding on the islet on Lake Arpi every 2-5 years, juveniles visiting annually. In addition, up to 500-800 (2002) individuals of near threatened Great Snipe (*Gallinago media*) occur on marshlands of River Akhuryan during spring migration.

Criterion 3: The site is unique by its comparatively natural specific high-mountain communities and evidently species-rich, including at least 24 species of animals and 13 species of plants listed in the Red Data Book of Armenia, including ecologically related to wetlands: Transcaucasian Water Shrew (*Neomys schelkownikovi fodiens*), European Otter (*Lutra lutra*), Red-necked Grebe (*Podiceps grisegena*), Great White Pelican (*Pelecanus onocrotalus*), Dalmatian Pelican (*Pelecanus crispus*), Great Cormorant (*Phalacrocorax carbo*), Black Stork (*Ciconia nigra*), Northern Shoveler (*Anas chrypeata*), Greater White-fronted Goose (*Anser albifrons*), Common Crane (*Grus grus*), Corn crake (*Crex crex*), Great Snipe (*Gallinago media*), Black-winged Stilt (*Himantopus himantopus*), Armenian Gull (*Larus armenicus*), Siberian Iris (*Iris sibirica*). The oxbow lakes are also the only sites for the Yellow water-lily (*Nuphar luteum*) in Armenia.

Criterion 4: Total 163 bird species have been recorded in the area of which 80-85 are also nesting there, including Dalmatian pelican (*Pelicanus crispus*) and Corn crake (*Crex crex*). Of special concern is the large breeding colony of Armenian Gull (*Larus armenicus*).

Criterion 6: Here currently (2008-2010) is situated the largest breeding colony of Armenian Gull (*Larus armenicus*) (Red Data Book of Armenia) – 5,000-8,000 pairs, which makes 20-30% of total breeding individuals in its population.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Caucasus Ecoregion

b) biogeographic regionalisation scheme (include reference citation):

WWF/CEPF

Williams, L., N. Zazanashvili, G. Sanadiradze, A. Kandaurov (Ed.), 2006. An Ecoregional Conservation Plan for the Caucasus, Tbilisi: 222pp.

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology and Geomorphology

The Ramsar site is located on a high mountain plateau. Geographically, it represents the northernmost part of the mountain plateaus of the Near East. To the North and West it is bordered by the slopes of the Eghnakhagh Ridge, to the East by the Javakheti Ridges and to the South it gradually connects with the Yerevan Plateau. The total area covered by the Armenian Section of the Plateau and surrounding mountains is approximately 350 square km. The plateau is composed of volcanic rock materials originating from the Miocene, Upper Pliocene and the Pleistocene. Elevations range from 1500 to 3042m. The Plateau is composed of a flat table and softly undulating terrain. Except for the Ardenis Pond, Lake Arpi is the only lake found in the Armenian Section of the Plateau. Wetlands characterize the Akhuryan drainage system to the South of the Plateau. The lakes were formed as a result of volcanic activity. The site is of high seismic activity. Disastrous Spitak earthquake on 7 December 1988 destroyed or heavily damaged most of constructions in surrounding settlements.

Origin.

Lake Arpi had been a natural lake until 1950 when it was dammed to provide irrigation water via an artificial canal constructed parallel to the Akhuryan River for the Akhuryan Reservoir, located south-west of the Region's capital Gyumri, near the Turkish border. Prior to damming, the lake water volume averaged 5 mln. m³. The lake's average depth used to be less than 50-70 cm and its total water surface area approximately 5 km². In 1950 Lake Arpi was converted into a reservoir. On completion of the dam the average water surface area of the Arpi Reservoir increased to 22,1 km² with a volume increase to an average of 90 mln. m³ and an average depth of 1-1.5 m. The maximum storage capacity of the Reservoir is 110 mln. m³.

Hydrology

All water catchment area of Lake Arpi is 22,000 ha and is fully protected by National Park. The largest and most important of the six tributaries of Arpi Reservoir is River Chivin, providing almost 30% of the total inflow into the reservoir. The inflow is located to the North-west of the lake. River Chivin is fed by more than 60 natural springs. River Chivin provides about 25 million m³ of water per year to the Arpi Reservoir.

More 4,907 ha are part of the water catchment areas of the Ashotsk and Ghukasyan rivers draining the West-facing slopes of the Javakheti Mountain Ridge. Both rivers merge north of the Akhuryan Gorge, draining the plateau via the gorge. Rivers Ashotsk and Ghukasyn and their tributaries, has a significantly higher water storage capacity resulting in a much more balanced flow regime, taking into consideration the significant abstraction for drinking water (down to Gyumri Region out of this upper basin) from two locations upstream of the gauging station at Krasar. The main reason is obviously a much higher storage capacity of sub-terrain soils (young volcanic formations, high porosity of tuff), also formed by the high flow volumes of upwelling groundwater at the locations of abstraction. Mean monthly flows in April and June cover only 40% of the annual flow compared to 65% in the Lake Arpi Basin. This relation is to be considered as natural as the drinking water abstraction is almost stable throughout the year. Also the relative discharge per catchment area (litres per second/square km) is more than 50% higher than in the western part of the upper Akhuryan Basin.

Downstream of the Arpi Reservoir this natural hydrological flow regime is heavily altered.

Roughly 80% of the annual flow is discharged in the period June to October while in the period April to June only about 20%. Mean monthly flows in July and August are roughly 15-times higher than in low flow periods.

Wetland, marshes and oxbows are mostly found along the former Akhuryan River below the village of Berdashen. All villages situated in here receive their potable water from natural springs.

Due to the frequent winds and shallow water the transparency in the lake-reservoir at present normally is not exceed 0.5 m, usually 0.2-0.4 m.

The water quality in the streams is remarkably high as compared to international standards and can be used for drinking without prior treatment. The water is carbonate with total mineralization about 100 mg l⁻¹.

Soils

Soils vary with elevation, slope, and edaphic conditions. The higher reaches of the Akhdag and Javakheti mountain ranges are characterized by mountain meadow soils, turning into meadow brown semi-desert soils at the foothills. The larger part of the Lake Arpi Plateau is covered by chernozems, interspersed with meadow-swamp soils found mostly in depressions and along the old Akhuryan Riverbed.

Climate,

The Javakheti/Ashotsk Plateau is typified by a harsh, predominantly continental climate, considered extreme and inhospitable. The Plateau is located at elevations ranging from 1,500 to 3,100 m. Average temperature in mid-July is recorded at 15°C for the central part of the Plateau.

Mean temperature ranges from -13°C in January to +13°C in July with an annual average of +1°C. There are 210 days annually with a daily temperature above Zero Centigrade. The vegetation period averages 160 days. Approximately 2,400 hours of sunshine per year are recorded for the area. The mean annual precipitation is 550 mm. Winds are pronounced in spring and fall.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The total surface of Lake Arpi catchment area is 220 km². The highest point of the catchment area, Mount Ghukasyan (3042 m a. s. l.) is situated on Armenian-Turkish border.

Physical features of the catchment area do not differ significantly from those described for the Ramsar site (see paragraph 16).

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Although direct measures were not done but seems lake-reservoir Arpi plays significant role for sediment trapping; oxbow marshes on both sites of canalized River Akhuryan could mitigate possible floods downstream.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

6 - O - Tp - Ts - M

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

1/ Lake-reservoir Arpi is predominantly shallow open water area. From aquatic plants only Water Pepper (*Polygonum amphibium*) forms floating thickets in several areas at the depths of up to 1.3 m. The water of Lake-reservoir Arpi is artificially regulated with seasonal fluctuations up to 3 m. Lake-reservoir Arpi is breeding and staging area during migration for dozens of waterfall species. The area is recognized as a globally important staging and breeding ground for migratory and resident bird species.

The main use of Lake-reservoir Arpi is for irrigation downstream, fishery, mowing, pasture.

2/ Alvar Sanctuary protects ephemeral wetlands and oxbows formed along the former Akhuryan riverbed. The wetlands are man-made, which developed after the Akhuryan River was converted into an artificial channel built during the 1950s. The Alvar wetlands are characterized by high diversity in flora and fauna with numerous species registered by Armenia’s Red List. The wetlands provide critical breeding habitat to several wetland dependent bird species and important staging areas to migratory bird in fall and spring. The oxbow lakes are also the only sites for the Yellow water-lily (*Nuphar luteum*) in Armenia.

3 and 4/ Sanctuary Ardenis protects the mostly ephemeral wetlands and the Ardenis Pond, which drains into the wetlands under protection. The wetlands provide critical breeding habitat to several wetland dependent bird species, the rare Common crane (*Grus grus*) being one of the more prominent summer residents.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The plant community “hygrophilous tall grasslands” (upper limit is 2,000 m) is dominated by *Phragmites australis*, *Typha latifolia*, *T. angustifolia* or *T. laxmanii*, *Schoenoplectus lacustris* and *Sch. tabernaemontani*. Rare and endangered species such as the Siberian iris (*Iris sibirica*), Slender gladiolus (*Gladiolus imbricatus*), *Traunsteinera sphaerica* and *Sellia rosenii* which are all included in Armenia’s Red Data Book are still common to the tall grasslands typifying the surroundings of Lake Arpi and the Akhuryan wetlands. “Hydrophilous short grassland” has developed above 2,300 m elevation. It is confined to small areas. Dominant species include several species of the *Equisetes* genus. Smartweed (*Polygonum amphibium*) dominates the Lake Arpi vegetation.

The landscapes of Javakheti Plateau represented by steppes, meadow-steppes, sub-alpine and alpine meadows, wetlands and petrophilous vegetation. Meadows and meadow-steppes are most characteristic for the Javakheti Region. Steppe plant communities (located between 1,800 –2,500 m) grow mostly on chernozem soils. They are characterized by *Festuca sulcata* and *Stipa capillata* grasses, mostly found along slopes of southern exposure and in flat areas. Dominant herbs include *Dactylis glomerata*, *Trifolium alpestre*, *Medicago dzavakhetica* and several *Geophytes* (i.e., *Gagea*, *Muscari* etc.). Field steppes occur only along

northern slopes which are dominated by *Stipa tirsia* accompanied by *Betonica macrantha* and *Aster ibericus*. The vegetation of the region is characterized by mesophilous features.

Around 670 species of higher plants have been recorded in the area of which 22 are included in the Red Data Book of Armenia and 22 are endemic to this part of the Caucasus. The abundance of many ornamental plants – orchids, gladioluses, irises, poppies and lilies – makes the area very attractive in spring and summer time.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

About 40 species of mammals are recorded (or expected to occur) which are represented by 6 insectivorous species, 8 bat species, 13 rodent species, 1 hare species, 10 carnivore species and 2 ungulates. Both ungulate species however as well as lynx and bear are rare visitors in this treeless region. Larger mammal species currently found are the European hare (*Lepus europaeus*), Badger (*Meles meles*), European otter (*Lutra lutra*), Red fox (*Vulpes vulpes*) and Wolf (*Canis lupus*).

The Nehring's mole rat (*Nannospalax nebringi*) is found only in this region and the Marbled polecat (*Vormela peregusna*).

The only non-native wild mammal is the muskrat *Ondatra zibethicus*, which was introduced to the Khanchali Lake (Georgia) in the middle 1980s and meanwhile has colonised most of the Javakheti Lakes, including Lake Arpi and Ardenis Pond.

The area is better known for its avifauna. The territory of Arpi Lake is identified by Birdlife International as Important Bird Area (IBA). Total 163 bird species have been recorded for the area, of which 80-85 species are known to nest in the target area. The other species are either migrants, summer visitors or their status remains unclear. Most of the bird species are related to the Lakes and Wetlands. Some of the more common species include 30 representative of the *Charadriiformes* family (10 of them are nesting in the area) and 24 species of the *Anseriformes* family of which 10 are known to nest. Seven species are of global conservation concern.

The area is one of the few areas in the Caucasus where breeding populations of the Common crane (*Grus grus*), White stork (*Ciconia ciconia*), Great White Pelican (*Pelicanus onocrotalus*), Dalmatian Pelican (*Pelicanus crispus*), and Velvet scoter (*Melanitta fusca*) are found.

The Velvet scoter (*Melanitta fusca*) occurs on Lake Arpi, as well as breeding pairs of the Dalmation pelican (*Pelicanus crispus*). The Armenian Gull (*Larus armeniacus*) is the only endemic water-related species at Lake Arpi with a large breeding colony found on two small islands of the Lake.

3 species of amphibians are reported for the area including the green toad (*Bufo viridis*), two species of frogs (*Rana macrocnemis* and *Rana ridibunda*). Of reptiles, six species of lizards and and four species of snakes are known.

Former native fish species of commercial interest to local communities included the three species of *Salmo fario* (Lakeform), *Leuciscus cephalus orientalis*, and *Barbus lacerta cyri*. In the early 1960s, *Coregonid* fish species from northern Russia jointly with Carp (*Cyprinus carpio*) were introduced to Lake Arpi. At a later stage, the Crucian carp (*Carassius carassius*) from southern Russia spread throughout the Lakes and Ponds of the Plateau including the Arpi Reservoir and Ardenis Pond. As a result, the native fish fauna and the benthic flora and fauna changed dramatically.

The number of insects and other invertebrates is rather low, but the presence of many endemic species for Armenia, Southern Caucasus and the wider Caucasus Ecoregion is seen as particularly valuable. Lake Arpi and its adjacent areas are characterized by mostly water related species. For this area 10 species of dragonflies have been recorded.

The number of recorded plankton animal species in natural conditions was 27 (*Rotatoria* 14, *Cladocera* 10 and *Copepoda* 3). The average biomass of the zooplankton was 8 g m⁻² of which *Cladocera* 18%, *Copepoda* 82%. After regulation of the water-level the number of plankton animal species decreased to 4, the biomass to 0.5 g m⁻².

Before water-level increase the main benthic animals were oligochaetaes, leeches, mollusk *Limnea stagnalis*, crustaceous *Gammarus pulex*, aquatic ticks, larvae of dragon-flies and *Chironomidae*. At present the total

biomass of the zoobenthos is about 0.1 g m⁻² of which 75% are *Chironomidae*, 20% oligochaetaes, and the rest 5% *Turbellaria*, *Gastropoda*, *Crustacea*, *Trichoptera*, *Coleoptera* and *Ephemeroptera*.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

First settlements on this area are dated back to VIII century B. C. In the past the site was used as a summer grazing place. This place is also used for hunting and fishing.

Although Armenia is famous for its architectural monuments, there are no valuable ones around Lake Arpi.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site:

Lake Arpi and the land around are state owned.

The land of the Alvar Sanctuary is owned largely by the state and a small portion by Alvar, Ardenis and Berdashen communities.

The land of the Ardenis Sanctuary is owned by Ardenis and Aghvorik communities.

b) in the surrounding area:

After independence in 1991 land reform focused on land privatization. Land privatization in the concentrated on family plots and structures within communities, not affecting the pasture land surrounding communities. Large tracts of land remain in state and communal ownership. Of 35,152 ha combined total land 16% are privately owned. Pasture land has generally not been subject to privatization, owned by communities and is mostly available for leasing only. The total size of hay meadows is 5,185 ha of which 15% are privately owned. Of the 14,736 ha arable land 32% are privately owned.

According to the Land Code (2001), state-owned lands can be converted to agricultural land or used for other purposes.

25. Current land (including water) use:

a) within the Ramsar site:

Fishery and cattle watering in Lake Arpi and pasture and hay making in Ardenis and Arval sanctuaries.

b) in the surroundings/catchment:

Fishery, live-stock breeding, hunt, growing of crops, potatoes.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:

- Low potential for economic alternatives;
- Extreme isolation of target area;
- Environmental threats vs. livelihood threats
- Overstocking resulting in growing land degradation;
- Over-fishing Lake Arpi resulting in depleted fish populations;
- No controlled sewage disposal and treatment;
- No garbage removal and official waste deposit sites;
- Poor with high contamination of water and village streets by livestock in surrounding communities;
- High donor dependence;
- Low number of tourists and poor tourism potential;
- Lack of long-term financial planning for Arpi National Park

b) in the surrounding area:

- Dwindling population resulting from emigration due to difficult living conditions and lack of job opportunities;
- Unfavourable climatic conditions;
- Unfavourable conditions for agriculture;
- Low potential for economic alternatives apart from livestock and agriculture;
- Extreme isolation of target area;
- Poor social infrastructure;
- Poor economic alternatives;
- Poor access to collateral funding and business loans;
- Poor road-network and access to markets;
- Overstocking resulting in growing land degradation;
- Poorly regulated grazing regimes and absence of enforcement of range use policies;
- Insufficient farming equipment;
- Insufficient crop diversification;
- Hillside cultivation and early/late season grazing leading to erosion and degradation;
- Over-fishing, overhunting and poaching;
- Potable water system for surrounding villages in urgent need of rehabilitation;
- No controlled sewage disposal and treatment in any of the communities;
- No garbage removal and official waste deposit sites;
- Poor hygiene in villages with high contamination of water and village streets by livestock;
- Labour saving technologies largely absent;
- Poor quality housing, lack of adequate housing and decrepit buildings as a result of Earthquake;
- Unsightly ruins from disintegrating former Soviet-style factories throughout the target area;
- Collapse of former central supply system;
- Un-resolved land tenure problems;
- High donor dependence;
- Low funding priority from treasury;
- Insufficient institutional ownership;
- Low number of tourists and poor tourism potential;
- Poor deployment of funds for road maintenance and winter snow removal;
- At current lack of long-term financial planning for development.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Lake Arpi is situated within the territory of Lake Arpi National Park. It is recognized as an Important Bird Area (IBA).

Ardenis and Alvar are fully included in the territories of the same name sanctuaries still pending Government approval.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV *; V ; VI

*pending Government approval

c) Does an officially approved management plan exist; and is it being implemented?:

The management plan of National Park and sanctuaries is elaborated but not officially endorsed yet.

d) Describe any other current management practices:

Support zone economic development plan is elaborated but not officially endorsed

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

The gazettment of Ardenis and Alvar sanctuaries are pending Government approval.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Recent research (2004-2010) has been implemented by the WWF Armenia on behalf of Armenia's Ministry of Nature Protection and with financial assistance from KfW.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The participation of local communities in conservation activities is expected to result in increased environmental awareness with positive ecological impacts. All tourism-related infrastructures for the have comprehensively been dealt with by the Lake Arpi National Park Management Plan. Main planned infrastructure includes the creation of the Visitor Centre, 3 Information Points, 3 camp grounds, establishment of 2 points of interests, boat launching ramps at Lake Arpi, and all signage related to the proposed tourism sites and infrastructure. The costs related to tourism infrastructure development to be covered under the Lake Arpi National Park part of the KfW-funded project.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Birding

The lakes and marshes are excellent birdwatching sites where one can observe breeding birds from May to July and migratory birds resting during spring and autumn.

Mountain and tourbiking

In summertime most of the area is suitable for mountain- and tour-biking. Nearly all gravel-roads in the area can be used for mountain and tour biking.

Horseback riding

There are horses for rent available near Lake Arpi (Darik village), the season typically extends from May to October.

Cross country skiing

With almost half a year snow cover Lake Arpi region is a perfect place for cross country skiing. Both equipment and guide service are available in Metseparar, Ashotsk and through the Shiraktours based in Gyumri.

Total number of tourists is constantly increasing but estimated number is still below 1,000.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.
Government Decree N 405-N, 16 April, 2009, "On the establishment of "Arpi Lake" National Park, on the approval of Charters of "Arpi Lake" National Park, and "Arpi Lake" National Park" SNCO".

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

"Lake Arpi" National Park State Non-commercial Organization;

Director Suren Avagyan, mobile phone +371 91 388106.

Temporary postal address: Mr. S. Avagyan, Director of "Lake Arpi" NP NCO, Ministry of Nature Protection, 3rd Government House, Republic Square, Yerevan 0010, Armenia

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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Schuerholz, G., U. Hirsch & M. Tovmasyan, 2009. Lake Arpi National Park support zone economic development plan. Final Draft. Duncan: 103 pp.

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