

# AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA

Phase: **FEASIBILITY STUDY /march 2018**

Beneficiary: **TOWN OF JIMBOLIA**

Designer: **SC TUBULAR TEHNO SISTEM SRL**



## TITLE PAGE

**Title of the project:** AQUATIC HABITAT RESTORATION AND  
RECREATION AREAS DEVELOPMENT WITHIN THE  
LAKES AREA IN JIMBOLIA

**Project Number:** 1/2017

**Designer:** S.C. TUBULAR TEHNO SISTEM S.R.L.  
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**Beneficiary:** TOWN OF JIMBOLIA

**Location:** INSIDE AND OUTSIDE THE BUILT-UP AREA  
OF JIMBOLIA – RECREATION AREA

**Phase:** FEASIBILITY STUDY

**Date:** march 2018



## RESPONSIBILITIES LIST

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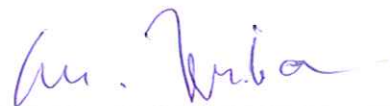
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Drawn up by:  
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## FEASIBILITY STUDY

### CHAPTER1. GENERAL DATA

#### **1.1. Title of the investment**

**„ Aquatic habitat restoration and recreation areas development within the lakes area in Jimbolia”**

#### **1.2. Location**

The investment is located in Jimbolia, which is located in the South-West of Timiș County.

Jimbolia is approx. 40 km from Timișoara Municipality.

The investment to be executed is a new one, comprising the rehabilitation of the lake area of Jimbolia.

The site is located in the Jimbolia Plain, a part of the Romanian West Plain.

#### **1.3. Holder of the investment**

JIMBOLIA TOWN HALL, Timiș County

#### **1.4. Beneficiary of the investment**

THE TOWN OF JIMBOLIA, Timiș County

#### **1.5. Drafter of the study**

S.C. TUBULAR TEHNO SISTEM S.R.L.



## CHAPTER 2. GENERAL INFORMATION ON THE PROJECT

### 2.1. Current situation and information on the responsible entity for the project implementation

#### **2.1.1. Current situation**

The chosen location – the lake area of Jimbolia – is a public utility tourist objective, in an advanced state of degradation and it was found that the water level of the lake decreases, and the eutrophication process has started, a specific process of lakes, consisting of the excessive enrichment with nutrients for plants, determining the excessive growth of algae and other aquatic plants, damaging the body of water from hygiene and aesthetic point of view, followed by a series of negative effects whose impact on the environment cannot be ignored.

The issue of reclamation and conserving the biodiversity, as well as the development of a leisure area, is a current issue for the local authorities; this is currently in the Feasibility study phase for obtaining the funding of the reclamation works.

### 2.2. Description of the investment

#### **2.2.1. Conclusions of the study on ecological, flora and fauna issues related to the lake area of Jimbolia:**

##### *General ecological considerations*

Aquatic areas, with all their geomorphological diversity and the complexity of the biotic communities populating them are ecological systems, having certain characteristics differentiating them to a certain extent from terrestrial ecosystems. The aquatic environment is more complex from physical and chemical point of view than the terrestrial one. Natural water is a solution of salts and gases in various ratios, varying depending the category of the relevant catchment area.

Even in the same area, the concentration of various substances can vary in space, area and depth, as well as in time, depending on certain conditions. Air has a more stable composition and a relatively equal distribution in geographical areas. If the oxygen in air is 150 mg/l, in the water it is 9.09 mg/l, at a temperature of 20°C. When this ratio changes very little with the latitude and altitude in the air, in the water, the oxygen solubility varies with the temperature, salt concentration in the water, quantity of organic substances, etc. The aquatic organisms have a larger taxonomic diversity than the land ones, those with a simpler morphology and physiology are dominant, which leads to the environmental conditions having a greater impact.

These characteristics are every important, especially for the biology of polluted catchment area, as the physical and chemical composition of the water and the hydrological and physical and geographical conditions are essential factors for determining the quantitative and qualitative composition of the biotic communities.

The aquatic ecosystems are very different as regards their integrity, as they are very different systems from structural and functional point of view. Completeness is a result of



the interaction, structural and functional differences between the elements of the system. The completeness of the aquatic system varies in time, as it can be changed by man. Thus, polluted catchment areas have a smaller degree of completeness, and the smaller this is as the pollution level is higher. Large lakes have a higher degree of completeness than the smaller ones and than ponds, and, in general, still bodies of water have a higher degree of completeness and running bodies of water.

There are certain relationships between the many elements of the aquatic ecosystem. Thus, there are close relationships related to feeding, reproduction, shelter, etc., between benthos, plankton and nekton in a lake. The change in the basic components of a biotic community leads to structural and functional changes of the entire ecosystem, thus leading to the change in its information content.

Taking into account that the maintenance of the dynamic balance, characterized by all open systems, aquatic ecosystems, is carried out by complex self-regulating mechanisms, we can assume that more complex self-regulating mechanisms lead to gaining a higher degree of completeness, as it is more independent from the variations of the external environment, thus it is more stable. The system's appropriate response can be measured by the change in the composition of the biological community depending on the chemical type of the relevant organic substances.

In this context, the degree of completeness of individual organisms is due to metabolism, thus, by maximizing the use of material and energy resources, more and more complex food chains are created. By these routes of matter and energy, as well information routes, the completeness is achieved in the ecosystem, which is based on an entire food web. The shape and size of this web varies depending on the ecosystem type, but also on the local conditions. For the conditions of aquatic ecosystems, the environmental, physical and chemical and hydrological factors of the biotope play an important role in the design of the food webs, in regulating the number of species and organisms that give the system's completeness. A principle of ecology stated by Thienemann in 1920 says that "the greater the diversity of environmental conditions, closer to normal, the larger is the number of species and the smaller the number of individuals of each species; the more the environmental conditions deviate from the normal, more unilateral, the smaller is the number of species and the greater the number of individuals of each species."

Simplifying to a great extent the conditions in an aquatic ecosystem, two cycles of matter can be found: a "large" cycle, comprising producers, various orders of consumers and decomposers. The decomposing organic matter is the result of dead aquatic organism and accumulation of residual products, and it represents and detritus, the food source of saprobes. Due to their activity, the detritus is decomposed in simpler organic products and ammonia, which, in their turn, are oxidized by bacteria and transformed in mineral salts that are necessary for the plants. In their turn, bacteria are the prey of bacterivorous organisms, and the detritus and saprobes are consumed by certain more evolved invertebrates, saprophagous and microphage organisms, thus achieving the second food cycle, the "small" cycle. The two cycles are closely connected, as various groups of invertebrates from the small cycle are the food of the consumers from the large cycle.



The connection between them is given by bacteria. In this stage, only the matter is recycled, the energy being progressively used in the vital processes of organism at various food levels of both cycles.

### **Biological characteristics of water**

**Still waters** are ecosystems with various degree of completeness, depending on the elements of the biotic communities populating them and on environmental conditions. They represent different units from point of view of shape, size and depth. Compared to rivers, still waters have their own life, with a certain level of autonomy.

Lakes are deemed closed biotic communities. In lakes, most of the matter and energy is not eliminated, but continuously transformed, recycled in that catchment area. The stability in time, as well as the possibility of typification of lakes is due to it. If the rivers have a higher degree of stability from trophic and morphological point of view, still waters evolve more quickly due to silting processes and the increase of their level of food webs. Lakes are deemed the most complex morphological and physiological structures, being the most studied bodies of water from hydrological and biological point of view.

Thus, in the *lakeside zone*, having a small depth, being well aerated, lit to the bottom, with important variations in temperature and vital substrate, is populated by various organisms that take part in the complex and specific relationships. The macrophytes are well represented, making a dense belt, named rizomemnon, and the microphytes make the biotectone and periphyton. A psammon community can be usually found on the sandy bottom of the lakes, which comprises bacteria, algae, protozoa, rotifers, nematodes, oligochaeta, copepods, ostracods, tardigrades, turbellaria and insect larvae.

The *pelagic zone* is characterized by the absence of a substrate, by the turbulent water motion, variable light and temperature. The three biotic communities, plankton, neuston and nekton, are specific. The plankton is made of small organisms that are passively moved by the water currents. Certain organisms, *Dreissena* and certain radiata, lead a planctonic life only in certain development stages (temporary plankton or meroplankton). Phytoplankton is made of cyanophyceae, chlorophyceae, dinoflagellates and diatoms, and the zooplankton is made of protozoa, rotifers, shellfish and certain insect larvae.

If, in running waters, the benthos provides the main elements for calculating the saprobity index, in lakes, this role is played by the plankton. Knowing the type, distribution and reasons (physical and chemical, biological, physiological and ecological) causing the quick growth of plankton, the sequence of plankton phenomena, the relationships between these phenomena is very important for saprobology. These factors are the basis for the assessment and forecast of a lake's water quality.

The neuston comprises the community of microorganisms populating the superficial tension film on the surface of still bodies of water. It floats on the upper side of the film or it is anchored on its bottom side.



The nekton comprises active swimming organisms, which are moving freely in the water. It comprises superior organisms, especially fish, to which crustaceans, mammals, batrachians and reptiles.

The deep zone can be characterized by the communities of organisms comprising in the benthos. The qualitative and quantitative composition of the benthos is determined by a number of specific factors: poor oxygenation, relatively constant temperature, darkness, presence of decomposing organic matter, etc. Heterotrophic, stenobiont, organisms that decompose organic matter can live under these conditions, feeding with mud and detritus: bacteria (ferruginous, sulphur, nitrous bacteria), protozoa, oligochaeta (tubificids), rotifers, crustaceans, insect larvae, especially chiromonidae, molluscs, etc.

Depending on their level of trophicity, lakes are classified in: *oligotrophic*, *mesotrophic* and *eurotrophic* lakes. Oligotrophic lakes have a poor biological capacity, as they are poor in nutrients, especially in nitrate and phosphorous salts. Their transparency is high, they are well oxygenated and the plankton is poorly developed. They do not have a lakeside flora, thus they are characterized by a small primary production. The benthos comprises stenoxibiont organisms, the chiromonidae larvae, especially *Tanytarsus* genus being characteristic for these lakes.

The eurotrophic lakes are rich in nutrients and calcium salts, promoting a strong growth of flora and fauna. Loose organic mud can be found at their bottom. They are lakes with a high biological capacity, in which the phytoplankton is abundant, sometimes causing water efflorescence. The benthos comprises eurioxibiont organisms, dominating the chiromonidae larvae and tubificid worms.

The mesotrophic, or oligo-mesotrophic lakes are deemed intermediate types, such as the case of lakes from Jimbolia. These bodies of water are part of the category of *Artificial lakes*, *excavated lakes* - the lake's basin was created by excavations. The material resulting from excavations is seldom deposited so as it creates a contour dam. This type of lake is created either by special excavations for executing the lake, or by flooding places that were excavated for other purposes: quarries, mines, etc. The global determination of the water quality in these lakes was carried out by construing the performed tests in seasonal campaigns regarding the classification under quality categories.

In order to determine the level of food web of the lakes' water, the evolution of the following physical and chemical and biological indicators is followed up: water temperature, transparency, oxygen content, nutrients, evolution of biotic communities (phytoplankton biomass and level of food web) depending on the limits provided by the standards in force.

In the case of the lakes from Jimbolia, being borrow pits of the old brick, only macronalyses were performed, and the microanalyses, confirming the macronalyses by lab tests, shall be performed.

From point of view of the lake biotic communities and existing food chains of the aquatic organisms, the eutrophication phenomenon is a characteristic one. This is about a phenomenon that is characteristic for lakes or other aquatic ecosystems, consisting of excessive growth of phytoplankton species, especially blue algae, green algae, flagellates,



diatoms, due to the direct or indirect penetration of certain fertilizers, such as nitrate, carbon or phosphorus compounds. This water shall have an characteristic appearance of "soup" with a specific odour of rotten fish, mildew, and a certain colour - green, brown or red - depending on the algae that grew in excess.

In other words, the eutrophication phenomenon consist of their enrichment with nutrients for plants, which determines an excessive growth of algae and other aquatic plants, damaging the water quality from hygiene and aesthetic point of view, leading to difficulties in processing and using it for drinking, and agricultural or industrial purposes. The eutrophication can be deemed a type of organic pollution. It represents one of the unwanted consequences of anthropic intervention, the phenomenon being extremely complex from point of view of evolution and, at the same time, having a number of effects of which impact on the environment cannot be ignored. In the case of major anthropic pressure, it is more correct to speak about accelerated eutrophication.

Eutrophication indicators: the most affected bodies of water are lakes, being classified as follows, depending on the average biomass content:

- oligotrophic lakes – biomass up to 10 mg/l.
- mesotrophic lakes – biomass between 10 and 20 mg/l.
- eutrophic lakes – biomass over 20 mg/l.

Other eutrophication indicators used besides the biomass production are:

- dissolved oxygen content mg/l.
- nitrogen and phosphorus content.
- ratio of chemical oxygen consumption and concentration in dissolved oxygen.
- mineral nitrogen / total phosphorus ratio = 10.

### **General information on the biodiversity in the area**

The lakes area in Jimbolia, in close vicinity to the former brick factory Bohn&Co (established in 1864), is located in the Western part of Timiș County, in the administrative territory of the town of Jimbolia, located in the North-Eastern part of it, 43 km in the West from Timișoara Municipality and 1 km from the border crossing to Serbia. The location is in the Jimbolia Plain, part of the Romanian West Plain.

The area is not inhabited, except for the guarding staff.

Specific toponymy: unknown.

**There is not any protected natural area, Natura 2000 site or other natural environment conservation area on the relevant land or its vicinity.**

In performing the biodiversity analysis, we have taken into consideration the plants of the analysed area, the species and their distribution, the climatic influences on the conditions of the geographical environment.

We have found that the plants, flora and vegetation, have an important effect on the animal populations, it can provide important information on the biological potential, on their ecological variability and diversity.

The habitats we have researched between 2015 and 2016 are located in the temperate climate area of the West Plain. The plain climate is moderate, with oceanic influences in the most part, and sub-mediterranean influences, especially in the South of Bega River.



The annual average temperature decreases in the South under 11°C, and in the North under 10°C. The average temperature of the hottest month is 22°C in the South, 21°C in the North, and average temperature of the coldest month is between -1°C and -2°C. It arises a difference, amplitude, of 22°C - 23°C, smaller that in the Romanian Plain, indicating that the climate approaches the oceanic one from point of view of temperature. The rainfalls reach 600-700 mm / year, a higher value than in other similar regions in the country, due to its location and the air masses coming from the West.

The Western winds are predominant, and the Southern Wind blows in the South, which is Mediterranean element. There is an oceanic influence in the plain climate, in the North and Centre, as well as a sub-mediterranean one in the South.

### Description of habitats .

From the point of view of habitats, the analysed land falls under the forest steppe zone, representing a transition area from grassy vegetation areas of arid steppes to the trees in the forest. This area in Romania is currently almost fully transformed in agricultural ecosystems, only small areas with typical and unaltered forest steppe vegetation being maintained (this is not the case in the analysed area!).

Thus, in the vicinity of Jimbolia, the grass species are mixed with weeds, and the general area is dominated by planted trees or trees coming from usable seeds (*Populus alba*, *Populus canadensis*, *Robinia pseudoacacia*, *Pinus silvestris*, *Salix alba*, *Salix babylonica*, *Salix cinerea*, *Salix caprea*, *Carpinus betului*, *Morus alba*, *Juglans regia*) as well as shrubs from spontaneous flora (*Rosa canina*, *Crataegus monogyna*, *Prunus spinosa*, *Sambucus nigra*, but also *Laburnum anagyroides*).

The lakes area is surrounded by a strip of rush-bed between 1 and 3 m (the reed, *Phragmites australis*, is a herbaceous perennial plant from the Poaceae family, with creeping rhizomes, with erect and rigid stem of 1-4 m, green-bluish lanceolate leaves and flowers arranged in tassels), cut at the initiative of Jimbolia Town Hall .

A number of found plants, especially in the vicinity of the lakes: many species of Poaceae (Gramineae), *Agropyrum repens*, *Polygonum aviculare*, *Capsella bursa-pastoris*, *Bromus sterilis*, *Solanum nigrum*, *Chenopodium album*, *Convolvulus arvensis*, *Rumex acetosella*, *Daucus carota*, *Erigeron canadensis*, *Abuthilon theophrasti*, *Ambrosia artemisiifolia*, *Amaranthus retroflexu*, *Chenopodium album*, *Cirsium arvense*, *Cynodon dactylon*, *Digitaria sanguinalis*, *Hibiscus trionum*, *Rubus caesius*, *Echinochloa crus-gall*, *Polygonum aviculare*, *Polygonum lapathifolium*, *Polygonum persicaria*, *Setaria glauca*, *Setaria viridis*, *Sorghum halepense* etc.

These disjointed plant communities do not reach their full potential due to the anthropic factor, dust, or even temporary negligence; this way, the phytocenoses are merely suggested by the presence of some or other characteristic species; therefore, **no rare or endangered flower species were found in the analysed area, it is not important from economic or scientific point of view, and it is not mentioned in the Red Book of habitats and species.**

The dynamics of the quantity and quality of these species is random. They are deemed a focal point for weeds, host plants, pest, etc., a place for burrowing and refuge for many



species of insects, reptiles, which are not desired, and they are subject to cleaning campaigns, and they may represent as nesting place for a number of birds (*Galerida cristata*, *Motacilla alba*, *Anthus campestris*, *Luscinia megarhynchos* etc.).

### Description of the species. Invertebrates.

The abbreviations in the text represent the **conservation status**: (EN) - endangered species; (CR) - critically jeopardized species; (VU) - vulnerable species; (C) - common species; SP – protected species, needs protection, as well as the **phenological group**: OV - summer guest; OI - winter guest; S - sedentary species, and the Roman numbers represent the **months during which the species is present in the country**.

### Class INSECTA

**The order Odonata** is represented by large dragonflies (Anisoptera), *Agrion puella* and *Pyrosoma nymphula*, Adonis dragonfly, as well as by small dragonflies (Zygoptera), *Libellula depressa*, blue hawker, *Aechena cyanea*, four-spotted chaser, *Libellula quadrimaculata*, s.a.

**The order Orthoptera** is represented by *Gryllus campestris*, field cricket, *Decticus verrucivorus*, *Tettigonia viridissima*, great green bush-cricket, *Gryllotalpa gryllotalpa*, mole cricket, *Dociostaurus maroccanus*, etc.

**The order Blattaria** is represented by *Blatta orientalis* at the Farm.

**The order Dermoptera** is represented by *Forficula orientalis*.

**The order Mantodea** is represented by *Mantis religiosa*, (EN).

**The order Heteroptera** is represented by *Eurigaster custriae*, *Eurigaster maurus*, *Eurigaster integriceps*, sunn pest, *Aelia acuminata*, *Aelia rostrata*, stripped corn bug, *Pyrrhocris apterus*, firebug, etc.

**The order Hemiptera** is represented by *Gerris lacustris*, common pond skater, etc.

**The order Hidrophilidae** is represented by *Hydrophilus piceus*, great silver beetle, *Dytiscus marginalis*, etc.

**The order Hymenoptera** is represented by *Bombus terrestris*, bumblebee, *Vespa carbo*, wasp, *Cephus pygmaeus*, *Apis mellifera*, bee, etc.

**The order Acari** is represented by *Tetrangchus intrcel*, common red spider, *Araneus diadematus*, diadem spider, etc.

**The order Coleoptera** is represented by *Melolontha melolontha*, May bug, *Cetonia aurata*, rose chafer, *Coccinella septempunctata*, ladybird, *Zabrus tenebrioides*, corn ground beetle, etc.

**The order Diptera** is represented by *Tipula oleracea*, marsh crane fly, *Culex pipiens*, common mosquito, *Musca domestica*, housefly, *Musca autumnalis*, *Tabanus bovinus*, horse-fly, *Mayetiola destructor*, Hessian fly, *Osciuis frit*, frit fly, *Delia platura*, bean seed fly, etc.

**The order Lepidoptera** is represented by *Scatia segetum*, turnip moth, *Alucita sp.*, *Zygaena filipendule*, *Aporia crataegi*, back-veined white, *Aglaia urticae*, small tortoiseshell, *Inachis io*, peacock butterfly, *Vanessa atalanta*, the red admiral, *Pieris brassicae*, cabbage butterfly, *Genopterix rhamni*, common brimstone, etc. According to



our research, the representatives of this class are in large numbers and diverse populations. Most of them are common species (C).

### **Description of the species. Vertebrates.**

#### **Class AMPHIBIA**

**The order Anure** is represented by *Hyla arborea*, European tree frog, *Bufo viridis*, European green toad, *Pelophylax (Rana) ridibunda*, marsh frog, *Pelophylax (Rana) esculenta*, common water frog, etc.

#### **Class REPTILIA**

**The suborder Lacertidae** is represented by *Lacerta viridis*, European green lizard, *Lacerta muralis*, common wall lizard, more at the Farm.

**The suborder Serpentes** is represented by *Natrix natrix*, around the lakes.

Frogs, lizards and snakes, common species, are not in compact populations. The number of their individuals is insignificant.

#### **Class PISCES**

Fish species can be found in the analysed area, but not having a substantial biomass and without any economic importance. Thus *Esox lucius*, pike, *Rutilus rutilus*, roach, *Blicca bjoerkana*, silver bream, *Carassius gibelio*, Gibel carp, *Alburnus alburnus*, bleak, *Scardinius erithrophthalmus*, common rudd, *Lepomis gibbosus*, pumpkinseed, *Leuciscus idus*, ide, etc.

#### **Class AVES**

Water birds, (Ord. Gaviformes and Podicipediformes), as well as shorebirds (Ord. Charadriiformes), having a connection to aquatic environment, fly occasionally in small roving flocks, during the autumn migration, IX-X and during the spring migration, III-IV, (wild ducks and geese, lapwings, gulls, marsh terns, cranes, waders).

**The order Podicipediformes** is represented by *Tchibaptus ruficolis*, little grebe, nests in the rush-bed, OV, III-XI, spends in part the winter if it can find unfrozen bodies of water; *Podiceps cristatus*, great crested grebe, OV, II-XI, may nest in the rush-bed.

**The order Ciconiiformes** is represented by *Ardea cinerea*, grey heron, OV, II-III-IX, spends in part the winter here, nests in the Macedonian forest, after breeding, a small number of individuals on grass fields and on ploughed lands, it hunts rodents; *Ixobrychus minutus*, little britten, OV, IV-X, nests in the rush-bed and weeds; *Nycticorax nycticorax*, night heron, OV, IV-X, nests in the ponds in Serbia, close to the border; it can be seen during migration and feeding; *Egretta garzetta*, little egret, idem, *Egretta alba*, great egret, OV, III-X, can be seen after breeding in order to feed, sometimes during winter; *Ciconia ciconia*, white stork, SP, OV, III-VII-IX, nests in Jimbolia, some individuals can be seen on lakes, on cultivated agricultural fields, especially during the years with many rodents, as well as on freshly ploughed lands.

**The order Anseriformes** is represented by *Cygnus olor*, mute swan, OV, can be present during the entire year, roving juveniles; *Anas platyrhynchos*, mallard, S, I-XII, *Anas querquedula*, garganey, OV, III-X; both species nest on the ponds in Jimbolia, they can sometimes be seen during the seasonal migration; *Aythya ferina*, common pochard, S, OV, II-XI, sometimes nests in the rush-bed.



**The order Gruiformes** is represented by *Rallus aquaticus*, water rail, OV, III-XI, it nests in the rush-bed, *Porzana porzana*, spotted crake, OV, III-XI, nests in the rush-bed, *Gallinula chloropus*, common moorhen, OV, III-XI, nests here, *Fulica atra*, coot, OV, II-XI, sometimes spends the winter in the vicinity of hot springs, nests in the rush-bed.

**The order Falconiformes** is represented by *Accipiter nisus*, sparrowhawk, SP, S, OV, III-XI, *Circus cyaneus*, hen harrier, SP, CR, OI, X-III; some lone individuals can be seen during the cold season, both species hunt flock-living passerine, *Buteo buteo*, common buzzard, SP, S, I-XII, nests in the forests in the vicinity of the town of Jimbolia or in lone trees, uses the area for feeding, *Falco tinnunculus*, common kestrel, SP, OV, II-III-IX, sometimes spends the winter, nests, hunts rodents, rarely sparrows, *Falco subbuteo*, hobby, SP, OV, IV-X-XI, nests in the neighbouring forests, lone individuals hunts swallows, martins, field sparrows and starlings, *Falco vespertinus*, red-footed falcon, SP, OV, IV-IX, a small number of pairs nest in the poplars along the main road, they mainly hunt insects.

**The order Galliformes** is represented by *Perdix perdix*, grey partridge, S, I-XII, some pairs nest in the area, *Coturnix coturnix*, common quail, OV, IV-X-XI, some pairs nest in the area, they use the weeds on the channels and unused lands, *Phasianus colchicus*, pheasant, S, I-XII, a small number of pairs nest in agrobiocenoses.

**The order Charadriiformes** is represented by *Vanellus vanellus*, lapwing, OV, II-III-XI, can be found in large numbers during rainy years, *Larus ridibundus*, black-headed gull, S, OV, III-IV-VII-IX, appears in the areas in larger or smaller flocks, during ploughing and during migration.

**The order Columbiformes** is represented by *Columba palumbus*, common wood pigeon, OV, III-X, even if it nests in the lowland forests in the vicinity, comes here after breeding for feeding on grains, *Streptopelia turtur*, turtle dove, OV, IV-IX, in large number during the spring and autumn migration, there are 1-2 pairs during the year at the feeding source, sometimes nests here, *Streptopelia decaocto*, collared dove, S, I-XII, seldom nests here, a larger number of individuals come at the end of summer, during the wheat harvesting season.

**The order Cuculiformes** is represented by *Cuculus canorus*, common cuckoo, OV, IV-IX, a small number of individuals nest here, especially on the grassed channels (parasite of the nests of butcher birds, nightingale, whinchats).

**The order Strigiformes** is represented by *Tyto alba guttata*, barn owl, SP, EN, S, I-XII, *Athene noctua*, little owl, SP, S, I-XII; both species nest at the Factory, a pair each, they feed on rodents.

**The order Coraciiformes** is represented by *Merops apiaster*, European bee-eater, SP, OV, V-IX, nesting in Jimbolia, on steep loess shores, only one individual appearing during flight; *Upupa epops*, hoopoe, SP, OV, V-IX, nests in the area in a small number of individuals; *Alcedo atthis ispida*, common kingfisher, S, sometimes nests in the mud.

**The order Piciformes** is represented by *Dendrocopos major*, great spotted woodpecker, S, I-XII, nests in the Canadian poplars; *Picus viridis*, S, I-XII, also appears



and nests in the poplars, sometimes feeding on the ground; *Dendrocopus syriacus*, Syrian woodpecker, S, I-XII, nests in the Canadian poplars and mulberries in the vicinity.

**The order Passeriformes** is represented by *Galerida cristata*, crested lark, SP, SP, S, I-XII, few pairs nest close to the lakes; *Alauda arvensis*, Eurasian skylark, OV, II-III-XI, a common species, nesting in agrobiocenoses, but also in the weeds; *Hirundo rustica*, barn swallow, SP, OV, III-IX, *Delichon urbica*, common house martin, SP, OV, IV-VIII, both species nest in Jimbolia and at the Factory, they appear in flight hunting flying insects; *Corvus cornix*, hooded crow, S, I-XII, few individuals appear on the trees on the side of the road; *Corvus frugilegus*, rook, S, I-XII, nests in poplars, in large numbers during the cold season, in the vicinity of the Farm from Clarii Vii. They come in the area during autumn and winter; *Coleus monedula*, jackdaw, S, I-XII, nests in towns and villages, can be found on ploughed fields and around the Factory; *Pica pica*, magpie, S, I-XII, a few pairs nest in the poplars and in blackthorn bushes on the sides of the road, in Jimbolia; *Garrulus glandarius*, Eurasian jay, S, I-XII, nests in the vicinity, in the poplars on the sides of the main road, in Jimbolia; *Parus major*, great tit, S, I-XII, nests at the Farm; *Parus caeruleus*, S, I-XII, nests in Jimbolia, it could be found occasionally in the lakes area; *Aegithalos caudatus*, long-tailed tit, S, nests in bushes; *Turdus merula*, blackbird, S, I-XII, partially migrates, a few pairs nest in the area around the lakes, in elder trees, hawthorn bushes and wild rose bushes; *Turdus pilaris*, winter thrush, fieldfare, OI, XI-II, in large numbers on grass fields, channels, in the weeds; *Oenanthe oenanthe*, wheatear, SP, OV, III-X, nests on the ploughed fields, furrows, in weeds; *Saxicola rubetra*, whinchat, SP, OV, IV-IX, a species nesting the weeds on the side of the road; *Acrocephalus arundinaceus*, great reed warbler, OV, IV-X, nests here; *Acrocephalus scirpaceus*, Eurasian reed warbler, OV, IV-IX, nests here; *Acrocephalus schoenobeanus*, sedge warbler, OV, III-XI, nests in the rush-bed; *Erithacus rubecula*, robin, S, is present mostly in winter; *Troglodytes troglodytes*, Eurasian wren, S, is present mostly in winter; *Luscinia megarhynchos*, common nightingale, SP, OV, IV-IX, nests here but few pairs were found in the area, in the coppices of the channels around the lakes; *Sylvia communis*, common whitethroat, OV, IV-IX, few pairs nest in the area; *Sylvia curruca*, lesser whitethroat, OV, IV-IX, nests at the Farm and in coppices; *Phylloscopus collybita*, chiffchaff, OV, III-X, nests in poplars; *Muscicapa striata*, spotted flycatcher, OV, IV-IX, could nest in the area but it can be mostly be seen during autumn migration; *Anthus campestris*, tawny pipit, SP, OV, IV-X, nests in the area, ore pipits can be seen during spring migration; *Motacilla alba*, SP, white wagtail, OV, III-IX, a few pairs nest in the area; *Motacilla flava*, yellow wagtail, SP, OV, IV-IX, a few pairs nest in the area; *Lanius minor*, lesser grey shrike, OV, V-VIII, sometimes nests in the area; *Lanius collurio*, red-backed shrike, SP, OV, IV-IX, a few pairs nest in bushes; *Lanius excubitor*, great grey shrike, OI, X-IV, lone individuals can be seen during migration and in the winter; *Oriolus oriolus*, golden oriole, OV, IV-X, nests in poplars; *Sturnus vulgaris*, common starling, OV, III-X, nests in the area, gather in roving flocks after breeding, around the Factory, on cultivated fields; *Sitta europaea*, wood nuthatch, S, nests in poplars; *Passer domesticus*, house sparrow, S, I-XII, nests more frequently in Jimbolia and in the buildings in the



vicinity of the lakes; *Passer montanus*, Eurasian tree sparrow, S, I-XII, nests in medium large flocks around the lakes, in weeds and on fallows; *Carduelis chloris*, greenfinch, S, I-XII, also nests in Jimbolia, in the winter gathers in roving flocks; *Carduelis carduelis*, goldfinch, S and OI, I-XII, nests in weeds, bushes, trees, at the Factory, as well as in the vicinity (Jimbolia), it can be found in large numbers in the winter, in roving flocks; *Carduelis cannabina*, common linnet, S, I-XII, partially migrating, can be found in the area as OI, in large number on grass fields and in weeds; *Emberiza calandra*, corn bunting, OV, III-X, nests in the area; *Emberiza citrinella*, yellowhammer, S, I-XII, a few pairs nest in the area.

Note: more bird species specific for wetland in Jimbolia, represented by lakes and surrounding habitats, but also for the area, can be found by permanent observations, as this area is well-known to ornithologists as a corridor for birds (spring and autumn migration route).

Taking into consideration that most bird populations are Community birds of local and regional scientific interest, the implementation of Community projects in the lakes area must be given a special consideration. As regards the conservation of the bird species in the area, it must be taken into consideration that Romania undertook a number of obligations regarding nature protection under the Treaty of Accession to the European Union. Among them, we can mention the improvement of management and monitoring activities related to birds of Community interest and habitats, as mentioned in the Birds Directive (Directive 79/409/EEC of the Council) on the basis of which the Special Protection Areas (SPA) for the bird populations within the Natura 2000 network were established.

The main necessary activities for this purpose are: collecting data on bird populations of Community interest on the reference list - Monitoring bird species of Community interest on the reference lists in Romania; raising public awareness on the results of the research related to the status of bird populations in Romania, for carrying out an adequate management.

### Class MAMMALIA

The found mammals species are: *Lepus europaeus*, brown hare, *Vulpes vulpes*, fox, *Meles meles*, European badger, *Mustella putorius*, polecat, *Mustella nivalis*, weasel, *Mustella erminea*, stoat, VU, appearing only by accident, *Talpa europaea*, mole, *Erinaceus europaeus*, common hedgehog, *Rattus rattus*, house rat, *Microtus arvalis*, common vole, *Crocidura leucodon*, bi-coloured shrew, insect-eating species, *Mus musculus*, house mouse, *Mus spicilegus*, steppe mouse, *Apodemus argarius*, striped field mouse, *Micromys minutus*, European harvest mouse, *Cricetus cricetus*, European hamster, mostly rodents.

The representatives of the mammals are common species, the large ones being of a certain economic interest, as they are hunted. Their number is not large, as they are present in the area only by accident. For example, during the last few years, in the area around Jimbolia, the red fox population was reduced by hunters, while the badger, less known, a nocturnal animal, bred in large numbers, occupying the habitat of the previous species.



Mammals are unevenly distributed in the area, depending on the ecological season, food source and disturbance factors. Only the rodents (order Rodentia) can be found in large numbers, periodically, usually every 4 years, reaching even larger numbers.

The protected species are stoat (*Mustella erminea*) and European hamster (*Cricetus cricetus*), appearing only by accidents, thus establishing a protected area for these species is not justified.

### Final conclusions

The real data collected by us shall represent the starting point for the development of the lakes area from the former land of the brick and tile factory in Jimbolia. The implementation of a project, respectively the work stages, shall be carried out by selecting those with the smallest impact on the environment, on the biodiversity of the area taken in consideration. All investments shall comply with these notions and principles.

- The lakes are artificial, the argillaceous soil being excavated for brick and tile manufacturing. They form an exceptional wetland, as there are no other water resources with a similar area in the territory of Jimbolia.
- They are funnel-shaped, in certain areas the shores are steeper, and, depending on the macroscopically-analysed biological capacity, they are oligo-mesotrophic lakes.
- The accumulated water quantity comes from rains, but also from ground water deposits and springs.
- The water level is maintained at the same level, similarly to the communicating vessels principle, by means of underground connections.
- It is not recommended to create connections between the lakes by means of channels, due to these reasons.
- In order to maintain the water quantity and quality to an optimum level, a deep drilling can be taken into consideration, with a pumping station, to an adequate distance from the lakes or from other water sources. A study for maintaining the optimum water level is proposed, its main source being the ring canals HCN232 and HCN305.
- The maintenance and development of the lakes area shall focus on boundary and perimetral areas and the areas between the lakes.
- The area management shall take into consideration the existence of spontaneous flora and fauna by maintaining, taking stock, caring for them and monitoring them.
- The previously planted areas can be kept for recreation by select cutting and seasonal cleaning.
- The old rush-bed on the shores can be harvested and removed from the area during the cold season. During the other seasons, the reed habitats should be maintained, as they are nesting and resting places for a large number of water bird and mammal species. The rush-bed is also an ecotone used by fish species for laying eggs and rearing the spawn.
- Ploughing, using fires, executing sewerage-related works or other works is not recommended during the development of surface dry areas, as they could temporarily or permanently change the habitats and plants associations and, implicitly, reduce the invertebrate fauna, which is necessary for creating the food chains.

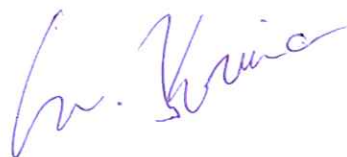


- Bird populations monitoring is a legal obligation, see Directive 79/409/EEC of the Council, on the conservation of wild birds, adopted on 2 April 1979, the species taken into consideration are the species of Community interest mentioned in this study.
- The resident birds, summer guests, as well as migratory species look for and frequently visit the above-mentioned lakes, as they do not find any other places in the region. Their observation can represent a part of spending time in open air, but can also serve educational purposes, by extracurricular school programmes.
- In order to facilitate the observations and carrying out programmes related to bird populations, a observation tower can be installed and equipped with books and binoculars for identifying the birds.
- The "House of Nature" information point for the natural assets from Jimbolia, under the patronage of Natural Science Department of the National Museum of Banat from Timișoara, can be used for storing the notes, collected materials and documentations from the field, as a database for special exhibitions, conferences, ecology classes and various advertising materials on the flora and fauna elements of the spontaneous biodiversity in the lakes area.

#### **General measures recommended to be taken during the development works:**

- protection and rehabilitation of biological resources;
- measures for the protection or reduction of flora degradation;
- measures for the protection or rehabilitation of the shelters for animals;
- replanting trees or grass;
- measures for the protection of the aquatic fauna during water collection;
- other measures for reducing the impact on biodiversity;
- measures for aerating the water in order to avoid the lakes eutrophication.

Drawn up by,  
Zoologist - ornithologist and conservation - biological investigations expert  
**M-Kiss Andrei**



## **Need and opportunity to promote the investment**

The promotion of the investment is necessary and opportune, as the natural habitats and species in the area shall be improved, aiming to protect and improve the quality of life and of the biodiversity in general, and, at the same time, a new recreation area shall be created for nature and clean air lovers.

## **Technical and economic scenarios by which the project's objectives can be reached**

The purpose of the project is to rehabilitate the lakes area in Jimbolia and to develop a recreation area.

The general objective of the project is to improve the water quality; to de-cog and sanitize the shores from the recreation area.

## **Proposed scenarios**

### **Option 1**

- In order to maintain the lakes' water quantity and quality to an optimum level, a deep drilling, approx. 200 ml, flow rate 30 l/s, is proposed (includes drilled hole cabin, hydraulic and electrical system of the drilled hole cabin, submersible pump, water distribution network to the lakes)
- Mounting of well-type water aeration system – 10 pcs.
- Mounting of aeration ventilation, injector type aerator (they also prevent ice formation on the water surface during winter) – 10 pcs.
- 3 pcs. cascades fitted with submersible pumps for water recirculation.
- De-cogging and sanitation of shores in the social gathering area and in the pontoon building areas – total length of 150 m
- Profiling of the shore in the social gathering areas and in the pontoon building area – length 150 m.
- Shore protection by laying out geo-textile on the embankment – length 150 m.
- Birds observatory – 1 piece.
- Floating pontoons – 3 pieces, size 3x4 m.
- Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 piece.
- Gazebos with surface on soil of minimum 16 sq.m – 2 pcs.
- Urban furniture comprising: benches - 30 pcs., waste bins – 40 pcs., tables – 15 pcs., support for 10 bicycles - 3 pcs..
- Info-kiosk containing 6 pcs. of information boards (information on species, flora and fauna), with sizes 100x80 cm – 1 piece.
- Infopoint for displaying the general information on biodiversity – 2 pcs.
- Pedestrian wood bridge – 1 piece with the length of 10 m.
- Playing area with protective carpet
- Area of open air sports equipment, in accordance with the images



- Ornamental trees 20 pcs.
- Hedge for delimiting the spaces used - 50 m.
- Platform for selective collection of waste, including 4 containers – piece.

### Estimate bill variant 1

Exchange rate of 03.2018= 4.6575 lei/Euro

Item no	Chapter and sub-chapters of expenses	Value (without VAT)	VAT	VValue ( including 19 % VAT)
		Thous lei	Thous lei	Thous lei
1	2	3	4	5
<b>I - WORKS OF BUILDINGS AND INSTALLATIONS</b>				
1	Big depth drilling, aprox. 200 ml, flow rate 30 l/s.	218,400	41,496	259,896
2	Mounting of water aeration installation, fountain type aerator – 10 pcs	66,500	12,635	79,135
3	Mounting of water aeration installation, injector type aerator – 10 pcs.	70,410	13,378	83,788
4	Cascades - 3 pcs.	62,600	11,894	74,494
5	De-cogging and sanitation of shores –L= 150 m	39,132	7,435	46,567
6	Profiling of the shore in the social gathering areas and in the pontoon building areas – length 150 m.	19,560	3,716	23,276
7	Shore protection by laying out geo-textile on the embankment – length 150 m.	23,460	4,457	27,917
8	Birds observatory – 1 piece	90,000	17,100	107,100
9	Floating pontoons – 3 pieces, size 3x4 m.	70,400	13,376	83,776
10	Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 pcs	113,500	21,565	135,065
11	Gazeboes with surface on soil of minimum 16 sq.m – 2 pieces.	35,250	6,698	41,948
12	Urban furniture	78,230	14,864	93,094
13	Info-kiosk containing 6 pieces of information boards with sizes 100x80 cm – 1 piece.	15,650	2,974	18,624
14	Infopoint – 2 pieces.	13,700	2,603	16,303
15	Pedestrian wood bridge – 1 piece with the length of 10 m.	43,200	8,208	51,408
16	Playing area	37,200	7,068	44,268
17	Area of open air sports equipment	58,780	11,168	69,948
18	Ornamental trees 20 pieces	4,330	0,823	5,153
19	Hedge for delimiting the spaces used 50 m.	3,533	0,671	4,204
20	Platform for selective collection of waste, including 4 containers	19,950	3,791	23,741
<b>TOTAL I</b>		<b>1.083,785</b>	<b>205,920</b>	<b>1.289,705</b>
<b>II - MOUNTING</b>				
1	Assembling of machineries and technological equipment	0,000	0,000	0,000
<b>TOTAL II</b>		<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
<b>III- PROCUREMENT</b>				
18	Machineries and technological equipment	0,000	0,000	0,000
19	Transportation machines and technological	0,000	0,000	0,000
20	Endowment	47,950	9,111	57,061
<b>TOTAL III</b>		<b>47,950</b>	<b>9,111</b>	<b>57,061</b>
<b>TOTAL I + II + III</b>		<b>1.131,735</b>	<b>215,031</b>	<b>1.346,766</b>



**The total investment cost in the variant 1 according to the attached general estimate is of Lei 1.346.766 thous. lei (including VAT) of which C + M 1.289.705 thous. lei ( including VAT )**

## **Option 2**

- Mounting of well-type water aeration system – 10 pcs.
- Mounting of aeration ventilation, injector type aerator (they also prevent ice formation on the water surface during winter) – 10 pcs.
- 3 pcs. cascades fitted with submersible pumps for water recirculation.
- Mounting photovoltaic panels as power source, of minimum 8 kW for supplying the pumps – 2 pcs.
- De-cogging and sanitation of shores in the social gathering area and in the pontoon building areas – total length of 150 m
- Profiling of the shore in the social gathering areas and in the pontoon building area – length 150 m.
- Shore protection by laying out geo-textile on the embankment – length 150 m.
- Study on “The role of the ring canals HCN 232 and HCN 305 as potential factors in the protection and conservation of the aquatic habitats within the lakes area in Jimbolia”
- Birds observatory – 1 piece.
- Floating pontoons – 3 pieces, size 3x4 m.
- Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 piece.
- Gazebos with surface on soil of minimum 16 sq.m – 2 pcs.
- Urban furniture comprising: benches - 30 pcs., waste bins – 40 pcs., tables – 15 pcs., support for 10 bicycles - 3 pcs.
- Info-kiosk containing 6 pcs. of information boards (information on species, flora and fauna), with sizes 100x80 cm – 1 piece.
- Infopoint for displaying the general information on biodiversity – 2 pcs.
- Pedestrian wood bridge – 1 piece with the length of 10 m.
- Playing area with protective carpet
- Area of open air sports equipment, in accordance with the images
- Ornamental trees - 20 pieces
- hedge for delimiting the spaces used - 50 m.
- platform for selective collection of waste, including 4 containers – piece.



## Estimate bill variant 2

Exchange rate of 03.2018= 4.6575 lei/Euro

Item no	Chapter and sub-chapters of expenses	Value ( without VAT)	VAT	VValue ( including 19 % VAT)
		Thous lei	Thous lei	Thous lei
1	2	3	4	5
<b>I - LUCRARI DE CONSTRUCTII SI INSTALATII</b>				
1	Mounting of water aeration installation, fountain type aerator – 10 pcs	66,530	12,641	79,171
2	Mounting of water aeration installation, injector type aerator – 10 pcs.	70,450	13,386	83,836
3	Cascades - 3 pcs.	62,624	11,899	74,523
4	Photovoltaic panels	168,287	31,975	200,262
5	De-cogging and sanitation of shores–L= 150 m	39,150	7,439	46,589
6	Profiling of the shore in the social gathering areas and in the pontoon building areas – length 150 m.	19,562	3,717	23,279
7	Shore protection by laying out geo-textile on the embankment – length 150 m.	23,474	4,460	27,934
8	Birds observatory – 1 piece	90,017	17,103	107,120
9	Floating pontoons – 3 pieces, size 3x4 m.	70,440	13,384	83,824
10	Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 pcs	113,490	21,563	135,053
11	Gazeboes with surface on soil of minimum 16 sq.m – 2 pieces.	35,220	6,692	41,912
12	Urban furniture	78,280	14,873	93,153
13	Info-kiosk containing 6 pieces of information boards with sizes 100x80 cm – 1 piece.	15,660	2,975	18,635
14	Infopoint – 2 pieces.	13,710	2,605	16,315
15	Pedestrian wood bridge – 1 piece with the length of 10 m.	43,050	8,180	51,230
16	Playing area	37,180	7,064	44,244
17	Area of open air sports equipment	58,700	11,153	69,853
18	Ornamental trees 20 pieces	4,350	0,827	5,177
19	Hedge for delimiting the spaces used 50 m.	3,530	0,671	4,201
20	Platform for selective collection of waste, including 4 containers	19,950	3,791	23,741
<b>TOTAL I</b>		<b>1.033,654</b>	<b>196,398</b>	<b>1.230,052</b>
<b>II - MONTAJ</b>				
1	Mounting of machineries and technological equipment	0,000	0,000	0,000
<b>TOTAL II</b>		<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
<b>III- PROCURARE</b>				
1	Machineries and technological equipment	0,000	0,000	0,000
2	Transportation machines and technological	0,000	0,000	0,000
3	Endowment	47,950	9,111	57,061
4	Study concerning “Role of the by-pass channels HCN232 and HCN305	39,140	7,437	46,577
<b>TOTAL III</b>		<b>87,090</b>	<b>16,548</b>	<b>103,638</b>
<b>TOTAL I + II + III</b>		<b>1.120,744</b>	<b>212,946</b>	<b>1.333,690</b>



The total investment cost in the variant 2 according to the attached general estimate is of Lei 1.333,690 thous. lei (including VAT) of which :

- C + M 1.230,052thous. lei (including VAT)
- Endowment 57,061 thous. lei (including VAT)
- Study 46,577 thous. lei (including VAT)

**b.2. Scenario recommended by the drafter**

The scenario recommended by the drafter is option 2.

**b.3. Advantages of the recommended scenario**

The advantages of the recommended scenario are

- reduced price
- the power necessary for the operation of pumps shall be produced by the two photovoltaic panels
- reduced operational costs

Compiled by,  
Fenici Gigi, Eng.





## **The constructive and technological description of the option chosen (option 2)**

### **Lake greening and embankment reinforcement**

1. In order to increase water quality by reducing microorganisms and removing algae, as well as decomposing of harmful gases located on the lake bed, the following measures are provided :

- a) Assembly of water airing installation – well-type aerator – 10 pieces.
- b) Assembly of water airing installation – injector-type aerator – 10 pieces (it also helps to prevent the formation of ice on the water surface, during the winter season) – 10 buc.



- c) Execution of 3 pieces of cascades provided with submersible pumps for water recirculation.



- d) Setup of power supply with photovoltaic panels of 8 kW minimum, used for supplying pumps – 2 pieces.
- e) Unsilting and sanitation of embankments in the social areas and pontoon construction areas – total length 150 m

f) Embossing of embankment in the social areas and pontoon construction areas – total length 150 m.

g) Embankment protection by setting geotextiles on the elevation, for the purpose of preventing the elevation being washed and decayed, in time, respectively - length 150 m.

Following a decreased water level, an annual decrease trend is noticeable, based on rainfall and loading of phreatic level structure. A proposal is made in relation to replacing lost water and maintaining lake levels at an optimal scale, with the following title: **"The role of belt channels HCN232 and HCN305 as potential factors for protection and preservation of water habitats in the areas of Jimbolia lakes"**

The study shall consist in:

- description of the water source and its chemical analysis
- description of the pumping station
- description of water conveyance towards lakes
- description of alternative power source from photovoltaic panels necessary for system operation.
- description of water treatment and conveyance towards lakes
- description of positive effects on water habitats and reduction of flooding in the area of Jimbolia;
- performance of bill of quantities.

## c.2. Birdwatcher

A wooden construction conceived as pinnacle over lakes and the surrounding landscape, the possibility to observe the stationary and transitory water avifauna, as well as for visual attraction, during the day and during the night, by providing observation equipment – 1 piece.

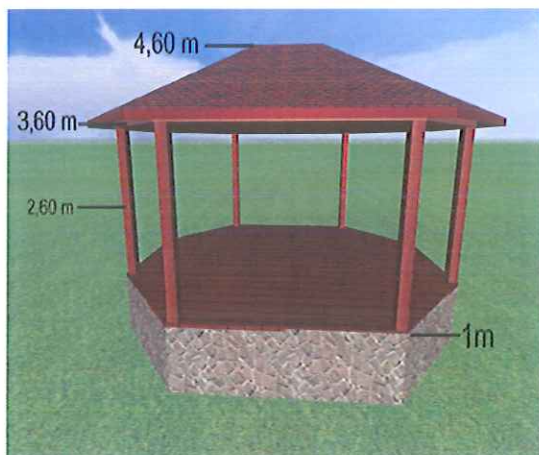


## c.3. Development of a social area for nature and clean air passionate

- Floating pontoons – 3 pieces, size 3x4 m.



- Octogonal-shaped pavilion – ground surface 40 sqm minimum – 1 piece.



- Gazebo 16 sqm minimum ground surface – 2 pieces.



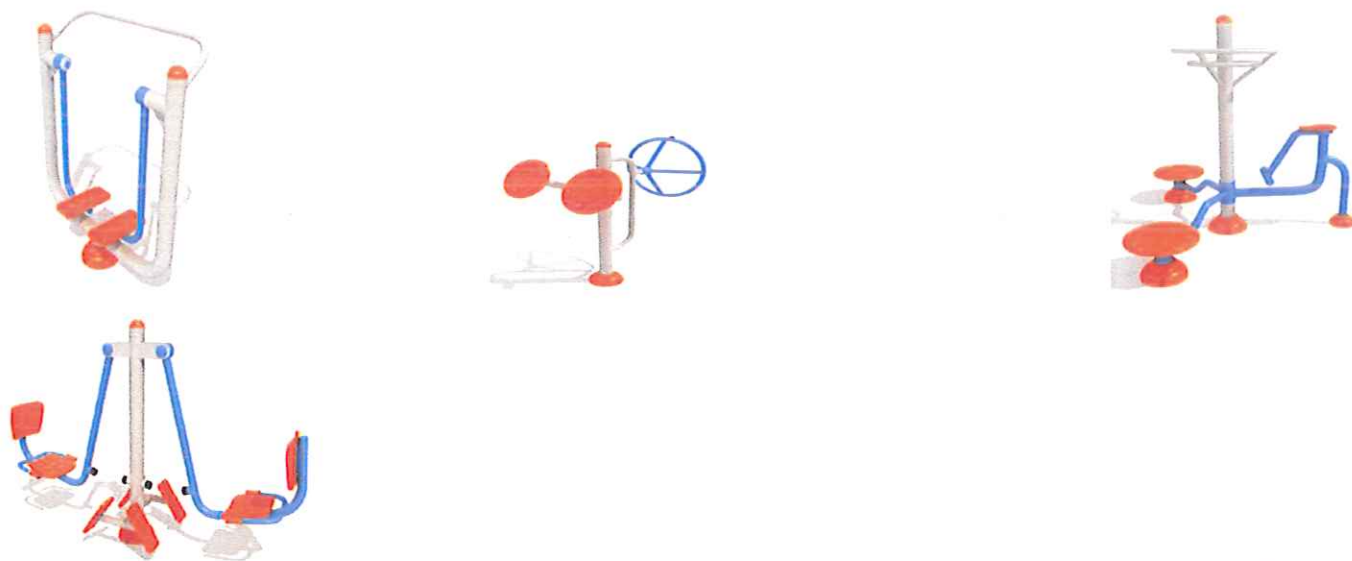
- Urban furniture consisting in: sitting bench - 30 pieces, waste bins – 40 pieces, tables – 15 pieces, rack for 10 bicycles - 3 pieces.
- Info booth containing 6 pieces of information panels (information concerning species, flora and fauna), sizes 100x80 cm – 1 piece.
- Info booth for listing of general biodiversity information – 2 pieces.



- Wooden pedestrian footbridge – 1 piece with length of 10 m.
- Playground provided with protection mat, fitted according to the following pictures:



- Outdoor sports equipment area, according to the photographs below



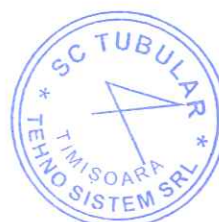




- Decorative shrubs - 20 pieces
- Live fence for limiting used areas - 50 m.
- Platform for selective waste collection, including 4 containers – piece.

**Compiled by,  
Gag Marian Ionel, Eng.**

**Varga Camelia, Eng. Arch.**




### **2.3. Technical data of the investment**

#### **a. Area and site**

The site of the investment is in the town of Jimbolia, located in the south-west of Timiș county. The town of Jimbolia is located around 40 km from the town of Timișoara.

The forthcoming investment is a new investment, comprising the rehabilitation of the lakes in the Jimbolia area.

The site is located in the Jimbolia Plain, as part of the Western Plain of Romania.

#### **b. Legal status of the land**

According to the Town Planning Certificate issued by the Jimbolia Town Hall, the land is located in the incorporated and unincorporated areas of the town of Jimbolia – Balti area.

#### **c. Status of permanent land occupation**

The permanently occupied land surface is 93.2 ha

#### **d. Land studies**

##### **d.1. Topographic studies**

Topographic plans underlying the drafting of the project are the following:

- site layout plan
- site plans

##### **d.2. Geotechnical studies**

The area is part of the large structural unit of the Pannonic depression, formed at the end of the Cretaceous period on a crystalline epi-mezozonal bedding, intensely creased by a network of breaks which led to the rise of magmatic intrusions towards the morphological surface.

The surface geology is made up of Quaternary deposits covering most the territory under discussion.

The Pleistocene, under its superior side, is represented by the high terrace formations, upper and lower (clays, sands, rarely gravels and rubbles) and loessoid deposits.

The site, being located in the town of Jimbolia, according to provisions of the Norm P100/1-2006, comes under acceleration peak values of the land for design  $ag = 0.16 g$  for earthquakes, with the average recurrence interval  $ARI =$  the 100-year zone and the corner period  $T_c = 0.7 s$ , according to the seismic mapping of Romanian territory. Freezing depth, based on STAS 6054-77, is at 0.70 m.

#### **e. Main features of constructions**

##### **Option 2**

For the execution of the improvement of the Jimbolia Lake Area, the following works are provided:

- Assembly of water airing installation over the entire surface of lakes

Airing may be obtained in two ways: direct airing by creating high volume pumped vortices (aerators), creation of cascades.



a) Well-type aerator – 10 pcs. Used for airing, oxygenation, degasification and de-layering by ascending breakaway of the in-depth water volume towards the surface and, subsequently, by sprinkling and spreading the water in a way similar to an artesian well.

**Main advantages:**

- Increases water quality by reducing microorganisms and removing algae, weed, waste, different decomposing deposits etc.
- Aids in the decomposition of harmful gases located on the lake (basin) bed by bringing such gases to the water surface.
- By drawing the water from deep down towards the surface area, it helps in stabilizing, leveling and regulating the temperature of the water on all layers, up to the surface
- Improves the health and growth speed of fish
- Minimum lake (basin) depth upon which it may operate must be at least 0.6 meters
- Useful during the winter season, as well.
- Specifically designed to provide higher performance with a low energy usage
- The engine case is made of stainless steel, thus providing efficient cooling during operation, while high-density polyethylene (HDPE) floats are capable of withstanding the corrosive action of water, as well as a longer exposure to solar rays

**Technical features:**

- The capacity of oxygen transfer into water is around 1.29 Kg/h
- Engine power is 1HP (0.75 Kw)
- Necessary electricity is at 220V / 1 phase / 50Hz / 5A or, on demand, 380V / 3 phases / 50Hz / 2.3A
- Power consumption is around 1 Kw/h
- Weight: 25 Kgs
- Size: Length - 90cm ; Width - 80cm ; Height - 75cm
- Efficient for surfaces ranging between 1 – 1.5 Ha

b) Injector-type aerator – 10 pcs. Used for oxygenation, degasification and de-layering by moving, under the form of currents, the in-depth water volume, thus increasing water quality by reducing microorganisms and removing algae, weed, waste, different decomposing deposits etc.

**Advantages:**

- Rapid decomposition of harmful gases from the lake (basin) bed and quick conveyance of oxygen in-depth
- By drawing the water from deep down towards the surface area, it helps in stabilizing, leveling and regulating the temperature of the water on all layers, up to the surface
- The engine recline angle is adjustable
- Extremely useful during the winter season, when its purposes lies in preventing the formation of ice on the water surface, ice that would not allow the emission of toxic gases resulting from the decomposition of different organic material located on the lake or basin bed.
- Specifically designed to provide higher performance with minimum energy usage

- The frame, transmission, blade, gripping elements, floats are made of stainless steel and high-density polyethylene (HDPE), capable of withstanding the corrosive action of water, as well as a longer exposure to solar rays
- May also be used in the basins meant for household and industrial wastewater treatment
- Technical features:
  - The capacity of oxygen transfer into water is around 2.40Kg/h
  - Engine power is 2HP
  - Necessary electricity is at 220V/1 phase/50Hz or, on demand, 380V/3 phases/50Hz
  - Power consumption is around 1.6 Kw/h
  - Sizes: 163 x 92 x 56 cm
  - Weight: 90 Kg
  - Electrical supply 230V/3.5kW;
  - Immersed cable wire;
  - Command and automation panel;
  - Anchorage system.
- Performance of cascades – Provided with submersible pumps for water recirculation; high-volume pump with large diaphragm for maximum water flow with 75 mm minimum output. The pump is able to pump solids up to a maximum of 6mm.
- for power supply, 2 pcs. of alternative power supplies of minimum 8 kW, with photovoltaic installation, shall be provided.
- controlled removal of reed from the social area and the pontoon construction area.
- unsilting and sanitation of embankments in the social areas and pontoon construction areas.
- embossing of embankment in the social areas and pontoon construction areas.
- embankment protection by setting geotextiles on the elevation. The geotextile is used for preventing the elevation being washed and decayed, in time, respectively.

**2. Study** concerning "The role of belt channels HCN232 and HCN305 as potential factors for protection and preservation of water habitats in the areas of Jimbolia lakes", highlighting the potential for additional water input in the area of the Jimbolia lakes. The study shall consist in:

- description of the water source and its chemical analysis
- description of the pumping station
- description of water conveyance towards lakes
- description of alternative power source from photovoltaic panels necessary for system operation.
- description of water treatment and conveyance towards lakes
- description of positive effects on water habitats and reduction of flooding in the area of Jimbolia;



### 3. Architecture and landscaping

The project provides *exterior finishing*, as follows:

- stairs and tiers – apparent concrete or natural stone
- platforms (pontoons) and footbridges – flooring made of natural weatherproof wood
- lawned and/or planted areas with flower arrangements,

*Protection against corrosion, dyeing*

Metal elements located on the outside, susceptible to weather exposure, shall be protected against corrosion by etching, priming and dyeing.

*Fittings*

Railings and battlements are fittings made from rectangular and round steel fittings, etched, primed and dyed.

### 4. Structural frames

General structural composition principles for the proposed objects:

*Platforms, pontoons*

The pontoon structural frames shall be rested against wooden piles. The piles shall be fastened with the help of wooden beams, over which wooden bulks shall be laid out in order to provide for the flooring. Where necessary, railings shall also be installed.

Floating pontoons may also be provided on top of the wooden structure.

*Footbridges*

The structural frame is made of treated wood. Foundations are insulated beneath the ends of the bridge beams, fastened with cross-section connection beams. The shape of footbridges complies with the architecture.

*Birdwatcher*

The structural frame is hardwood. Foundations are insulated with skid and bushing under every column and connected among themselves by connection beams. The structure shall be protected according to exposure conditions in the area

*Octagonal-shaped pavilion – ground surface 40 sqm minimum*

It shall be executed on a concrete base, with the structural frame made of treated wood. The structure shall be protected according to exposure conditions in the area.

*Gazebo 16 sqm minimum*

It shall be executed on a concrete base, with the structural frame made of treated wood. The structure shall be protected according to exposure conditions in the area.

*Info booth – 16 sqm minimum*

It shall be executed on a concrete base, with the structural frame made of treated wood. The structure shall be protected according to exposure conditions in the area.

*Infopoint*

It shall be executed on a concrete base, with the structural frame made of treated wood. The structure shall be protected according to exposure conditions in the area.

*Playground and outdoor sports equipment*

5 pcs. of playing objects for children and 7 pcs. of sports equipment shall be installed on concrete foundations.

## 5. Utilities

The land shall be connected to urban utilities in the area – power supply.

### 2.4 Decommissioning activities

After the completion of execution works for the project, site decommissioning and greening of the land occupied by the site shall be enforced.

All works shall be executed under the strict supervision of the site foremen, and shall consist in:

- dismantling of constructions and structures specific to site organizations;
- collection, capitalization and off-site transport of waste resulting from execution activities;
- site restoration in the area of access ways, technological roads and other temporarily occupied roads by means of land levelling works;
- decontamination of areas having been accidentally polluted with hydrocarbons or other hazardous substances (if any).

## f. Current status of utilities and analysis for use

### f.1 . Existing utilities

#### • Access ways

Access road to the area of the Jimbolia lakes - DN59C

### f.2. Utility requirements for the option set for promotion (option 2)

Power supply is needed for execution of the investment.

### f.3. Technical solutions for utility provision

Photovoltaic panels shall be installed for provision of electricity.

## g. Conclusions upon assessment of the environmental impact

### g.1. Protection of water quality

Water in lakes originates from rainfall and phreatic water dikes and streams, meaning that the issue of polluting underground or surface waters is out of the question.

### g.2. Air protection

No air pollution takes place under the current investment. Air pollution may only occur during the works execution period, from plant exhaust pipes.

### g.3. Protection against noise and vibrations

Noise and vibrations may only occur during the works execution period. They shall be set within legal limits.

### g.4. Protection against radiations

The proposed works do not produce or use any radiations during the technological process, meaning that no works, improvements, provisions and measures are necessary for protection against radiations.



#### **g.5. Soil and subsoil protection**

No soil or subsoil pollution takes place under execution of the current investment.

#### **g.6. Protection of land and water ecosystems**

Water in lakes originates from rainfall and phreatic water dikes and streams, meaning that the issue of affecting land or water ecosystems is out of the question.

#### **g.7. Protection of settlements and other public objectives**

For environmental and human health protection, the documentation provides measures to be taken for the execution works.

All measures taken shall comply with the provisions of the Emergency Ordinance for environmental protection 195/2005 approved by Law 265/2006 and Orders nos. 860 and 863/ 2002 on environmental impact.

The designed works do not influence, in any way, the objectives existing in the area, meaning that there is no need for measures for avoiding damage or restoration works for the affected works.

#### **g.8. Waste management**

No waste shall result from execution of the investment.

#### **g.9. Management of toxic and hazardous substances**

No toxic or hazardous substances shall be used during the execution and the operation of the investment objective.

#### **g.10. Site restoration works**

The land shall be restored to its initial state, after completion of the investment.

#### **g.11. Environmental monitoring provisions**

Lake water analyses shall be performed in order to monitor the environment.

#### **2.4. Execution term and main stages**

The actual execution term for the works is 10 months, however preparation of the procurement documentation and the rollout of the works procurement process shall entail 6 months.

### CAP.3. ESTIMATIVE INVESTMENT COSTS - Variant 2 ( proposed variant)

The estimative investment costs are disclosed in the general estimate bill that is found in the attachment of this documentation

#### 3.1 Estimate bills for items of for buildings and installations

Item no	Chapter and sub-chapters of expenses	Value ( without VAT)	VAT	Value ( including 19 % VAT)
		Thous lei	Thous lei	Thous lei
1	2	3	4	5
<b>I - LUCRARI DE CONSTRUCTII SI INSTALATII</b>				
1	Mounting of water aeration installation, fountain type aerator – 10 pcs	66,530	12,641	79,171
2	Mounting of water aeration installation, injector type aerator – 10 pcs.	70,450	13,386	83,836
3	Cascades - 3 pcs.	62,624	11,899	74,523
4	Photovoltaic panels	168,287	31,975	200,262
5	De-cogging and sanitation of shores–L= 150 m	39,150	7,439	46,589
6	Profiling of the shore in the social gathering areas and in the pontoon building areas – length 150 m.	19,562	3,717	23,279
7	Shore protection by laying out geo-textile on the embankment – length 150 m.	23,474	4,460	27,934
8	Birds observatory – 1 piece	90,017	17,103	107,120
9	Floating pontoons – 3 pieces, size 3x4 m.	70,440	13,384	83,824
10	Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 pcs	113,490	21,563	135,053
11	Gazeboes with surface on soil of minimum 16 sq.m – 2 pieces.	35,220	6,692	41,912
12	Urban furniture	78,280	14,873	93,153
13	Info-kiosk containing 6 pieces of information boards with sizes 100x80 cm – 1 piece.	15,660	2,975	18,635
14	Infopoint – 2 pieces.	13,710	2,605	16,315
15	Pedestrian wood bridge – 1 piece with the length of 10 m.	43,050	8,180	51,230
16	Playing area	37,180	7,064	44,244
17	Area of open air sports equipment	58,700	11,153	69,853
18	Ornamental trees 20 pieces	4,350	0,827	5,177
19	Hedge for delimiting the spaces used 50 m.	3,530	0,671	4,201
20	Platform for selective collection of waste, including 4 containers	19,950	3,791	23,741
<b>TOTAL I</b>		<b>1.033,654</b>	<b>196,398</b>	<b>1.230,052</b>
<b>II - MONTAJ</b>				
1	Mounting of machineries and technological equipment	0,000	0,000	0,000
<b>TOTAL II</b>		<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
<b>III- PROCURARE</b>				
1	Machineries and technological equipment	0,000	0,000	0,000
2	Transportation machines and technological	0,000	0,000	0,000
3	Endowment	47,950	9,111	57,061
4	Study concerning "Role of the by-pass channels HCN232 and HCN305	39,140	7,437	46,577
<b>TOTAL III</b>		<b>87,090</b>	<b>16,548</b>	<b>103,638</b>
<b>TOTAL I + II + III</b>		<b>1.120,744</b>	<b>212,946</b>	<b>1.333,690</b>



Drawn out by,  
Fenici Gigi



### 3.2 Financial Estimate

The currency exchange rate of the date: 03.2018

	Value (without VAT) Thous lei	VAT Thous lei	Value (including 19 % VAT) Thous lei
<b>FINANCIAL ESTIMATE NO. 1 – Land surveys</b>			
Topographical	0,000	0,000	0,000
Geotechnical	0,000	0,000	0,000
<b>Total Financial estimate no. 1</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>

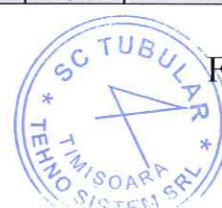
<b>FINANCIAL ESTIMATE NO. 2 – Expenses for approvals, agreements, permits</b>			
Town planning certificate	0,000	0,000	0,000
Approvals	0,000	0,000	0,000
Building permit	0,000	0,000	0,000
<b>Total Financial estimate no. 2</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>

<b>FINANCIAL ESTIMATE NO. 3 – Designing and Engineering *</b>			
Feasibility study	4,202	0,798	5,000
Technical design + execution detailed documentation +scope of works	37,720	7,167	44,887
Project check	2,300	0,437	2,737
<b>Total Financial estimate no. 3</b>	<b>44,222</b>	<b>8,402</b>	<b>52,624</b>

<b>FINANCIAL ESTIMATE NO. 4 – Organization of public procurement procedures</b>			
Drawing out of public procurement documentation	31,320	5,951	37,271
Public procurement	0,000	0,000	0,000
<b>Total Financial estimate no. 4</b>	<b>31,320</b>	<b>5,951</b>	<b>37,271</b>

<b>FINANCIAL ESTIMATE NO. 5 – Consultancy</b>			
Payment of consultancy services of elaboration of justificatory memorandum, assessment market studies, drawing out of financing application	0,000	0,000	0,000
Payment of consultancy services in the field of the management of the project financed	0,000	0,000	0,000
<b>Total Financial estimate no. 5</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>

<b>FINANCIAL ESTIMATE NO. 6 – Technical assistance</b>			
Technical assistance from the designer	0,000	0,000	0,000
Assistance for supervision through site manager	17,610	3,346	20,956
<b>Total Financial estimate no. 6</b>	<b>17,610</b>	<b>3,346</b>	<b>20,956</b>



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### 3.3 General estimate ” AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA”

The currency exchange rate of the date: 03.2018

Item no	Chapter and sub-chapters of expenses	Value (without VAT)	VAT	Value (including 19 % VAT)
		Thous lei	Thous lei	Thous lei
1	2	3	4	5
<b>PARTEA I *</b>				
<b>Chapter 1</b>				
<b>Land obtaining and arrangement expenses</b>				
1.1	Land obtaining.	0,000	0,000	0,000
1.2	Land arrangement.	0,000	0,000	0,000
1.3	Environmental protection arrangement	0,000	0,000	0,000
	<b>Total Chap. 1 =</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
<b>Chapter 2</b>				
<b>Expenses for making utilities required for the objective</b>				
2.1	Expenses for supply of utilities	0,000	0,000	0,000
	<b>Total Chap. 2 =</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
<b>Chapter 3</b>				
<b>Technical assistance and designing expenses</b>				
3.1	Land surveys	0,000	0,000	0,000
3.2	Technological machines assembling	0,000	0,000	0,000
3.3	Machineries, technological and functional equipment with assembly	44,222	8,402	52,624
3.4	Machineries without assembling and transport equipment	31,320	5,951	37,271
3.5	Endowments and furniture	0,000	0,000	0,000
3.6	Intangible assets Study concerning the ”Role of the by-pass culverts HCN232 and HCN305	17,610	3,346	20,956
	<b>Total Chap. 3 =</b>	<b>93,152</b>	<b>17,699</b>	<b>110,851</b>
<b>Chapter 4</b>				
<b>Expenses for the basic investment **</b>				
4.1	Buildings and installations	1.033,654	196,394	1.230,048
4.2	Technological machines assembling	0,000	0,000	0,000
4.3	Machineries, technological and functional equipment with assembly	0,000	0,000	0,000
4.4	Machineries without assembling and transport equipment	0,000	0,000	0,000
4.5	Endowments and furniture	47,950	9,111	57,061
4.5	Intangible assets Study concerning the ”Role of the by-pass culverts HCN232 and HCN305	39,140	7,437	46,577
	<b>Total Chap. 4 =</b>	<b>1.120,744</b>	<b>212,942</b>	<b>1.333,686</b>
<b>Chapter 5</b>				
<b>Other expenses</b>				
5.1	Site organization :	0,000	0,000	0,000



	5.1.1 – Works of construction + installation	0,000	0,000	0,000
	5.1.2 – related expenses	0,000	0,000	0,000
5,2	Commissions, fees, legal duties, financing costs:	5,212	0,990	6,202
	5.2.1 - Commissions, fees and legal duties - ISC 0.6%	5,212	0,990	6,202
	5.2.2 - Publicity	0,000	0,000	0,000
5.3	Miscellaneous and contingencies	0,000	0,000	0,000
	<b>Total Chap. 5 =</b>	<b>5,212</b>	<b>0,990</b>	<b>6,202</b>

**Chapter 6**  
**Expenses for putting into operation**

6.1	Training of the operating staff	0,000	0,000	0,000
6.2	Technological tests	0,000	0,000	0,000
	<b>Total Chap. 6 =</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>
	<b>Total Chap. 1 ÷ 6 =</b>	<b>1.219,108</b>	<b>231,631</b>	<b>1.450,739</b>
	<b>of which C + M =</b>	<b>1.033,654</b>	<b>196,394</b>	<b>1.230,048</b>
	<b>TOTAL GENERAL =</b>	<b>1.219,108</b>	<b>231,631</b>	<b>1.450,739</b>
	<b>of which C + M =</b>	<b>1.033,654</b>	<b>196,394</b>	<b>1.230,048</b>

Cost investment including VAT lei 1.450.739,00 / Euro 311.484,00  
of which C+M lei 1.230.048,00 / Euro 264.100,00.

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Fenici Gigi



## CHAP.4. COST – BENEFIT ANALYSIS

The cost benefit analysis was made by a company specialized in the field.



Translation from Romanian language

**COST - BENEFIT ANALYSIS**

**FOR THE PROJECT**

**“AQUATIC HABITAT RESTORATION AND  
RECREATION AREAS DEVELOPMENT WITHIN  
THE LAKES AREA IN JIMBOLIA”**

Drafter: S.C. 4U CONSULTING S.R.L.



## **COST – BENEFIT ANALYSIS**

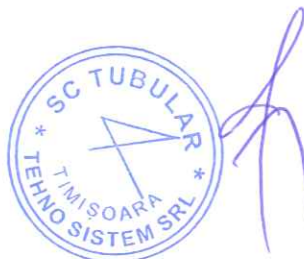
### **1. Identification of the investment, defining the objectives and specification of the reference period**

The investment that follows to be made is a new investment that comprises the rehabilitation of the area of the Jimbolia lakes.

The investment implies the reclamation of Jimbolia lakes and arrangement of a recreational area. More detailed, the investment implies:

- Mounting of water aerator installation, fountain type - pieces.
  - Mounting of water aerator installation, injector type (during the winter it prevents also the ice to form on the water surface – 10 pieces) pieces
  - Construction of 3 pieces of cascades endowed with submersible pumps for water recirculation
  - Installation of the electric power source with photovoltaic panels of minimum 8 kW for supply of pumps - 2 pieces.
  - Desilting and sanitation of the shores from the social gathering area and in the pontoon construction areas - total length of 150 m
  - Profiling of the shore in the social gathering areas and in the pontoon construction areas – length of 150 m.
  - Shore protection by laying out geo-textile on the embankment – length 150 m.
  - Study concerning "The role of the by-pass channels HCN232 and HCN305 as potential factors for the protection and preservation of the aquatic habitats from the area of the Jimbolia lakes"
  - Birds observatory – 1 piece.
  - Floating pontoons – 3 pieces, sizes 3 x 4 m.
  - Octagonal – shaped pavilion – surface on soil of minimum 40 sq.m. – 1 piece.
  - Gazeboes with surface on soil of minimum 6 sq.m. – 2 pieces.
  - Urban furniture composed of: Sitting bench – 30 pieces, garbage bins – 40 pieces, tables – 15 pieces, props for 10 bicycles – 3 pieces.
  - Info-kiosk containing 6 pieces of information panels (information concerning species, flora and fauna) with sizes 100x80 cm – 1 pieces.
  - Infopoint for posting general information on biodiversity - 2 pieces.
  - Pedestrian wood bridge – 1 piece with a length of 10 m.
  - Playing area provided with a protective carpet
  - Area of open air sports equipment, just like in the images.
  - Ornamental trees 20 pieces
  - Hedge for delimiting the used spaces 50 m.
- Platform for selective collection of waste including 4 containers.

The area of the Jimbolia lakes, in the close neighborhood of the former Bohn&Co factory of bricks (established in 1864) is located in the western part of Timis County, on the administrative territory of Jimbolia town, located on its North- Eastern part, at 43 km West to Timisoara Municipality and at 1 km from the Serbian cross border point. The site is placed in the Jimbolia Plain, as a constitutive part of the Western Plain of Romania.

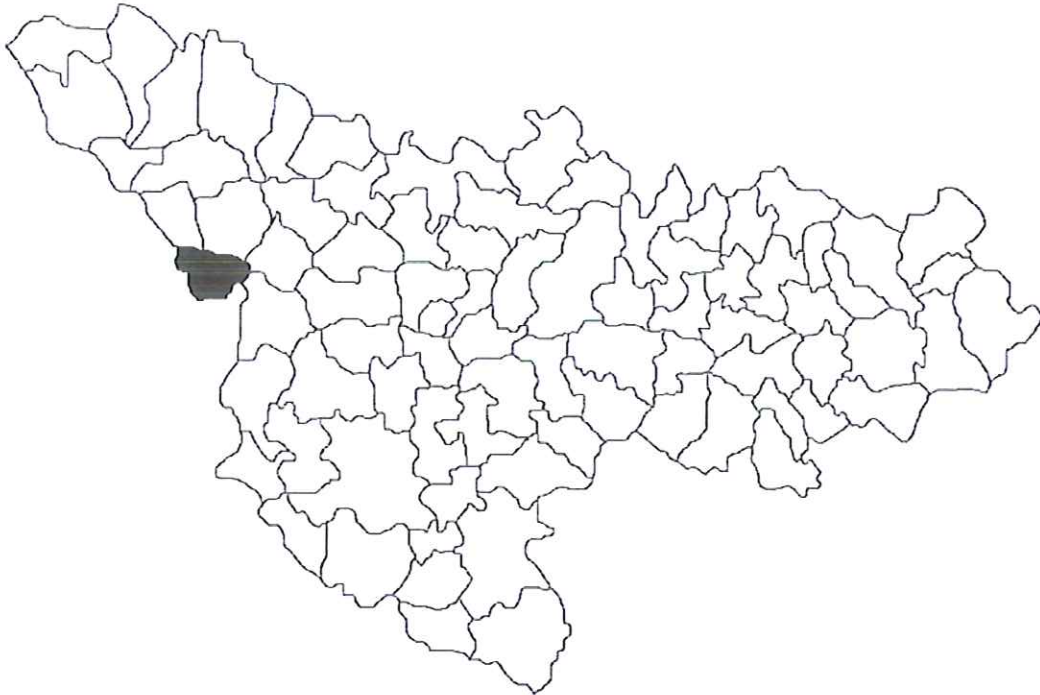


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Traducător și interpret autorizat  
Limba engleză și franceză  
Aut. Nr. 1240/2007



The area is not inhabited, except for the guardian staff.

Jimbolia Town is situated in Banatului Plain, at the contact point between Timisului Plain and Muresului Plain. It is located at the crossroads of some communication ways linking Romania and Serbia, being a railway and road cross border point at the border between the two countries. It is linked to Timisoara by DJ(county road) 59 and Kikinda (SR) - Jimbolia – Timișoara railway.



Jimbolia Town has a population of 10, 808 inhabitants (2011).

Jimbolia is located in the lower plains of Banat, in the West part of Timis County, in Torontalului Plain. They represent an aggregate of low plains, made by the Timis, Tisa, Bega, Barzava and Nera Rivers. Neighboring at the West with Yugoslavia (4 km to the Romanian - Yugoslavian cross border), Jimbolia town spreads on a total surface of 10,818.23 ha, of which:

- \* agricultural land – 9,735.21 ha;
- \* non-agricultural land – 9,735.21 ha;

The total surface of the agricultural land is divided as follows:

- \* arable – 8,980.42 ha;
- \* grazing lands – 724.76 ha;
- \* grass lands – 12.30 ha.

The access in Jimbolia can be made on the main road, on the national road DN59A being located 3 km far from Timisoara, Timis County capital town. 59A national road crosses over the town and reaches to Jimbolia Road cross border point.



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Translation from Romanian language

Another access gate in Jimbolia is in the Northern part, 59C national road, that links the Sânnicolau Mare Town and Cenad customs point, and still in the North, the county road to Lovrin locality.

For the railway traffic, Jimbolia is connected to Timisoara through a railway with the length of 39 km. Also, through Jimbolia, the Romanian railway network is connected to the Yugoslavian railways network.

In the urban Romanian system, Jimbolia is included in the category of small towns, under 20,000 inhabitants, at national level occupying the 175<sup>th</sup> place of the 261 towns of the country's town. In Timiș county, Jimbolia town occupied in 2002, the 4th place as number of inhabitants (11,113 inhabitants in 2002) after Timișoara, Lugoj and Sânnicolau Mare town, having 1.5% of the total population of the county and 2.5% of its urban population.

The geologic sub-layer is very much fragmented and is characterized by a great tectonic mobility. From the relief point of view, it is included in the Jimboliei Plain, subdivision of Muresului Plain, that make up the Northern part of Banatului Plain.

The town climate is characterized by the annual thermal values of 10.7°C and average rainfalls of 570 mm/an.

From the hydrography point of view, we notice the ascending and geo-thermal in-depth waters.

The vegetation is made up of steppe lawns replaced largely by agricultural crops. The soils are very fertile and are a part of the black earth category.

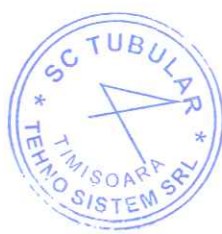
**The purpose of the project is the reclamation of the area of the Jimbolia lakes and development of a recreational area.**

**The general objective of the project is the improvement of the water quality; desilting and sanitation of the shores from the social gathering shores.**

This project, through the general and specific objective aimed, contributed to the achievement of the objectives of the Interreg Romania – Hungary Programme, Investment Priority 6/c – Preservation, protection, promotion and development of the natural and cultural patrimony.

The achievement of the project will ensure for the target groups:

- ❑ Improvement of the environmental conditions;
- ❑ Improvement of the population health;
- ❑ Development of the infrastructure of the small size urban projects;
- ❑ Increase of the water quality, by diminishing the microorganism number and removal of algae, weeds, garbage, various sediments in decomposition, etc.
- ❑ Helps in the decomposition of noxious gases from the lake bottom (basin) by their bringing to the water surface.
- ❑ driving by the water volume from the depth to the surface helps to the stabilization, leveling and adjustment of the water temperature on all the layers up to the surface



*[Handwritten signature]*

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- ☐ Increases the health and speed of fish breeding
- ☐ Useful also during winter

The target group is given by the inhabitants of Jimbolia Town as well as of Timis County and of the Hungarian cross border area.

By the activities that it implies and by the expected effects, the project in question will contribute for sure to the improvement of the environmental conditions of the inhabitants from Jimbolia town.

The sources used for checking up the achievement of the result indicators used above are the market surveys, statistical data, official statistics, mass-media, reports of the Local Council of Jimbolia Town, etc.

The project is not income generator.

## **2. Analysis of the options**

Options for the identified issue are:

- Option to achieve the project (project variant);
- Option to achieve an average investment;
- Option not to achieve the project (variant without investment).

### ***Option not to achieve the project***

If the local community did not undertake the activities necessary for the environmental protection and the increase of the population life quality, it would be a risk of continuous degradation of the natural resources.

Also, considering a more general extent, the alternative of not doing anything leads for sure to the increase of already existing differences between various places and areas from Romania, as well as between Romania and the other European Union member states.

In case that Jimbolia Town does not achieve this project, the following risks may occur with a higher intensity:

- ☐ Creating of some differences between various areas of the country;
- ☐ Creating of an unfavorable framework of the population's health;
- ☐ Development of the infrastructure of the small size urban projects;
- ☐ Increasing of the water quality from the lakes area;

### ***Option with average investment***

Jimbolia Town does not have all the funds necessary for the achievement of the project.



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Aut. Nr. 7540/2017

In time, with the support of the County Council and by means of other financing sources (other European and national financing programmes, bank loans), Jimbolia Town might implement the assumed activities of the project.

Therefore, the implementation of the activities implied by the project, in case that the required financing is not available, is possible only during a longer period of time (too long) and subject to drawing by some financing sources, thus existing the risk of not succeeding to draw by such sources.

This alternative is faulty if we consider it in terms of the local and county development plans, alternative of making the least, which does not lead to the improvement of the economic, environment and social standing of the locality.

In addition, the long period necessary for the implementation of activities with own sources or drawn in the future, draws by the intensification of the negative effects identified at the level of the community aimed by the project, as well as the possible additional costs (e.g. bank loans interests, etc.).

#### *Option to achieve the project*

This project, by the general and specific objective aimed, contributes to the achievement of the main objective of the Interreg Romania - Hungary Programme.

By its specific objective of environmental protection, the sustainable use of natural resources and improvement of the environmental conditions, the project is included in the specific objective of the Interreg Romania - Hungary Programme.

The achievement of the project will ensure for the target groups:

- ☐ Improvement of the environmental conditions;
- ☐ Improvement of the population health;
- ☐ Development of the infrastructure of the small size urban projects;
- ☐ Water quality improvement

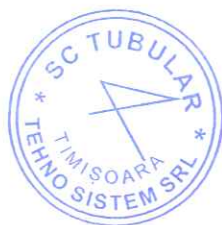
By the activities that it implies, and by the expected effects, the project in question will certainly contribute to the improvement of the life conditions of the inhabitants from Jimbolia town.

From the above presented, it is clear that, the option that brings most of the benefits, both social and economic, is the option to achieve the project.

### **3. Financial analysis**

Starting from the specifications of the object estimates, respectively of the financial estimate bills, considering both the major components of the project and the costs related to the technical assistance and supervision, the total capital investment taken into account is of lei 1,219,108 (without TVA), the equivalent of Euro 261,751, at an exchange rate of 4.5634 lei/1 euro valid on 03.2018.

The above mentioned amount represents the starting point of the cost-benefit analysis.



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Translation from Romanian language

The main performance indicators designed are: Internal rate of return, respectively the net updated value of the investment. The modality of calculation of these indicators observes the *Guide to Cost-Benefit Analysis of Investments Projects (2014)*.

The updating rate used within the analysis is of 5%.

The period used for the analysis is of 15 years, period that is deemed optimal for seeing the financial benefits of the project.

The project is not income generator.

**a) Presumed evolution of the operating costs**

Main categories of operating costs identified are:

- ☐ Wage-related expenses;
- ☐ Material / maintenance expenses

Annual expenses with wages were substantiated starting from the number of staff and average wage from the branch in question. Once with the achievement of the investment, it is taken into account creating 0 new jobs, but for operating the investment 2 current employees of UAT Jimbolia Town (for guarding and maintenance) will be used.

Therefore, starting from the gross average monthly individual wage and the number off employees that will develop activity, we will have the following wage costs for the first operating year:

INDICATOR	VALUE
1. Number of employees	
2. Gross average monthly individual wage + Contributions (RON)	2.160
3. Monthly wage related expenses (1 x 2)	4.320
4. ANNUAL WAGE-RELATED EXPENSES (RON) [3 x 12 months]	51.840

The material / maintenance expenses are made up of expenses with repairs, maintenance, consumables, their value increasing once with the years passing by. The values of these expenses are the following:

Cp 1 - 5	=	500	lei / year
Cp 6 - 10	=	750	lei / year
Cp 11 - 15	=	1.000	lei / year



Translation from Romanian language

Other types of expenses, such as for example, Expenses with the electrical power are not related to investment, as the project implies mounting of photovoltaic panels that will cover the electric power consumption.

The table from below centralizes the previous estimates, integrating also the material / maintenance costs during the entire period of exploitation taken into account (15 years).



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Translation from Romanian language

INDICATOR	COSTS														
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
1. Number of employees	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2. Monthly individual wages (RON)	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
3. Monthly wage contributions (RON)	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
4. MONTHLY WAGE RELATED EXPENSES (RON) (1+(2+3))	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320	4,320
5. ANNUAL WAGE-RELATED EXPENSES (RON) (4x12 MONTHS)	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840
6. ANNUAL MATERIAL / MAINTENANCE EXPENSES (RON)	500	500	500	500	500	750	750	750	750	750	1,000	1,000	1,000	1,000	1,000
13. ANNUAL EXPENSES (RON) (5+6)	52,340	52,340	52,340	52,340	52,340	52,590	52,590	52,590	52,590	52,590	52,840	52,840	52,840	52,840	52,840



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Translation from Romanian language

**c. Presumed Evolution of Income**

Following the project's implementation, there will be no income obtained by the Town Hall.

Thus, covering the operational costs will be made from income from the local budget.

The table from below renders the presumed evolution of the income in the investment operational time.



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*Translation from Romanian language*

INDICATOR	Income														
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
1. SUBSIDIES FROM THE LOCAL BUDGET JIMBOLIA - MONTH	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362
2. MONTHLY INCOME(1)	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362	4,362
3. ANNUAL INCOME (2x12 months)	52,340	52,340	52,340	52,340	52,340	52,590	52,590	52,590	52,590	52,590	52,840	52,840	52,840	52,840	52,840



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**d. Cost-benefit analysis**

The main performance indicators designed are: Internal rate of return, respectively the net updated value of the investment. The modality of calculation of these indicators observes the *Guide to Cost-Benefit Analysis of Investments Projects (2014)*.

The analysis reveals a net updated value of the investment, under the conditions of a "recommended" updating rate of 5%, of RON -1.086.779. The internal rate of return of the investment is negative. All these issues occur in case of implementation of a project that requires a total financial effort of RON 1,219,108 without TVA.

The analysis of the project that is aimed to be implemented shows that by the results that they generate the recovery of the initial investment is not achieved. All these, in the unanimously accepted context that the analysis of the project developed by the local public authorities does not lead to optimal results, from the direct benefits generated by the project, rarely succeeding a significant/ integral recovery of the initial investment.

As concerns the financial sustainability of the project, by emphasizing the net cash flow and the cumulated cash flow resulted during the exploitation period, it may be observed that it is positive each year of the exploitation period.

The cost-benefit ratio was determined by the dividing the exploitation costs on the reference period (15 years) to the benefits obtained from the investment exploitation.

The cost-benefit ratio is unitary (1), which indicates that the benefits obtained from the investment exploitation are equal to the exploitation costs.

The results of the cost – benefit analysis, as well as the financial sustainability of the project are disclosed in the table below.



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Updating rate	1 <sup>st</sup> year Of implementation	2 <sup>nd</sup> year Of implementation	5%	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
INDICATOR																		
1. ANNUAL INCOME (RON)				52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340
2. ANNUAL WAGE-RELATED EXPENSES (RON)				51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840	51,840
3. ANNUAL MATERIAL/MAINTENANCE EXPENSES (RON)				500	500	500	500	500	750	750	750	750	750	1,000	1,000	1,000	1,000	1,000
4. ANNUAL EXPENSES (RON)				52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340	52,340
5. INVESTMENT EXPENSES (RON)	74,011	1,120,462																
6. NET CASH FLOW (RON)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. CUMULATED NET CASH FLOW (RON)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. INTERNAL RATE OF RETURN (%)																		
9. NET UPDATED VALUE OF THE INVESTMENT (RON)																		
Costs	1,588,790																	
Benefits	1,588,790																	
Cost/benefit ratio	1.00																	



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#### 4. Sensitiveness analysis

##### Identification of the variables used in the analysis

Main variable used in the calculation of the inputs and outputs of the project analysis may be structured as being part of the following categories:

- ☐ Offer / demand: - ;
- ☐ Model parameters: Updating rate;
- ☐ Human resources: - ;
- ☐ Time and implementation variables: -
- ☐ Financial variables: Material / maintenance expenses;

##### Identification of the possible dependent variables

The used variables do not have a significant redundant character, being possible to consider them independent variables in terms of determinism.

##### Qualitative analysis of the impact of variables

VARIABLES	ELASTICITY		
	HIGH	AVERAGE	LOW
Updating rate		X	
Electrical power monthly consumption			X

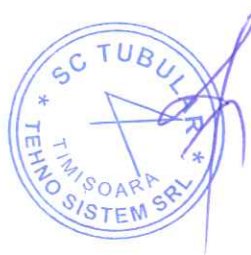
The most significant variables, retained from the qualitative analysis, are: updating rate, respectively material / maintenance expenses.

##### Quantitative analysis of the impact of variables – evaluation of elasticity

Reference value for the net updated value of the investment is of lei -1,086,779.

In the following lines, we intent to analyze the influence of each variable retained from the qualitative analysis over the efficiency indicators of the project.

KEY VARIABLES	NET UPDATED VALUE (lei)
Material / maintenance expenses	

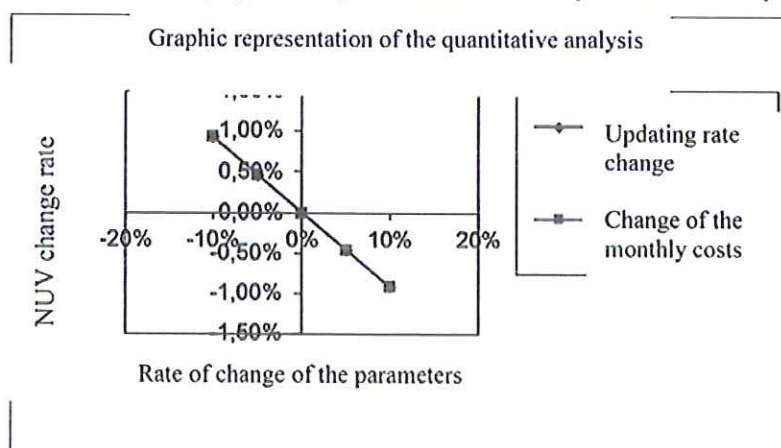


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- Decrease 10%	-1,096,865
- Decrease 5%	-1,091,804
- Increase 5%	-1,081,789
- Increase 10%	-1,076,834
<i>Updating rate</i>	
- Decrease 10%	-1,096,865
- Decrease 5%	-1,091,804
- Increase 5%	-1,081,789
- Increase 10%	-1,076,834

We present herein below the graphical representation of the quantitative analysis:



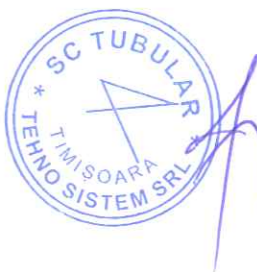
The modification of the updating rate and of the monthly consumption has an influence indirectly proportional over the project's efficiency indicator.

#### Identification of the critical variables

The quantitative analysis leads us to identifying the updating rate as being the most critical variable (with the most significant influence over the indicators of project's results).

#### 5. Risk analysis

##### Risk probability analysis



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The previous analyses identified two variables as being the most critical, namely the unit tariff and the unitary monthly consumption. For the two critical variables, we took into consideration 5 values, having therefore 25 combinations possible.

By using the Montecarlo method, the method that consists in the random extraction of a set of values for the critical variables, taken during the periods defined, we calculated one of the project performance indicators (NUV), both in financial and economic terms, for all the 2 possible combinations.

The calculation of the net updated value in Lei (NUV) for all the 25 possible combinations is presented in the table below.

Updating rate					
Electrical power	4.50	4.75	5.00	5.25	5.50
monthly consumption					
47.106,00	-1.096.865	-1.091.804	-1.086.779	-1.081.789	-1.076.834
49.723,00	-1.096.865	-1.091.804	-1.086.779	-1.081.789	-1.076.834
52.340,00	-1.096.865	-1.091.804	-1.086.779	-1.081.789	-1.076.834
54.957,00	-1.096.865	-1.091.804	-1.086.779	-1.081.789	-1.076.834
57.574,00	-1.096.865	-1.091.804	-1.086.779	-1.081.789	-1.076.834

We notice that 10 values of the 25 that resulted following the possible combinations are ranging in the interval Lei (-1.096.865) – Lei (-1.086.779) , and the rest of 15 in the interval of lei (-1.086.779) – lei (-1.076.834) .

Therefore, the possibility that the NUV ranges in the interval of Lei (-1.096.865) – Lei (-1.086.779) is of 0.4 (10/25), and the probability that NUV ranges in the interval of Lei (-1.086.779) – Lei (-1.076.834) is of 0.60 (15/25).

If the operational role of the analysis of sensitivity is to identify critical variables, for which further information is required to be obtained, the operational role of the risk analysis is to generate the expected values of the performance indicators.

Thus, in case of our project, with NUV of Lei -1.086.779 in the basic case, taking into account the result of the risk probability analysis, the expected value of NUV for the project is of Lei -1.086.814 (average (-1.096.865); (-1.086.779) x 0,4 + average (-1.086.779); (-1.076.834) x 0,6).



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### Undertaken risks

The project-related risks related may be structured in: technical, financial, institutional, environmental, respectively legal. We intend further on a presentation of the potential risks within each identified category, as well as of the measures of management of the risks, reduction of their potential effects.

The main technical risk identified is over / under – sizing of the capacities necessary for the project implementation and obtaining of the expected results. We deem this risk as being minimized, especially as a result of the analysis carried out over the adopted technical solutions.

The financial risks may appear both in the stage of implementation and in the stage of operation of the project. The main risk in the implementation stage is related to the sub-evaluation of the investment costs. In this case, due to wide market surveys, we consider that this risk is low.

In the operation stage, the major risk perceived is related to the under-evaluation of costs - these variables representing indicators with significant impact in the project efficiency.

As concerns the costs, we consider that they were correctly substantiated, on basis of various offers, respectively of solid calculations.

As concerns the legal and environmental risks, there were not identified the possible risks that might influence the good development of the activities proposed by the project.

### 6. Economic analysis

In accordance with the *Guide to Cost-Benefit Analysis of Investments Projects (2014)* the economic analysis is drawn out for the large size investments.

It is not the case of this project.

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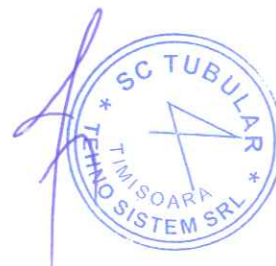
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## CHAP.5. INVESTMENT FINANCING SOURCES

The project will be financed within *Interreg V-A Romania-Hungary Programme*.

## CHAP 6. ESTIMATES CONCERNING THE WORKFORCE EMPLOYED BY THE INVESTMENT ACHIEVEMENT

6.1. Number of jobs created in the execution stage - 15 jobs

6.2. Number of jobs created in the operational stage - 0 jobs

## CHAP.7. MAIN TECHNICAL AND ECONOMIC INDICATORS OF THE INVESTMENT

Total investment value, including VAT lei 1.450.739,00 / Euro 311.484,00

Of which C+M Lei 1.230.048,00 / Euro 264,100.00.

### SPREADING OF THE INVESTMENT IN THE 1<sup>ST</sup> YEAR ( first 8 months)

Total investment value, including VAT Lei 88.073,00 / Euro 18.910,00

Of which C+M 0 lei / 0 Euro.

### SPREADING OF THE INVESTMENT IN THE 2<sup>ND</sup> YEAR

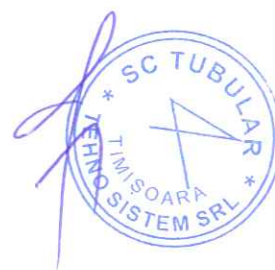
Total investment value, including VAT LEI TVA 1.362.666,00 / Euro 292.574,00

Of which C+M lei 1230.048,00 / Euro 264.100,00.



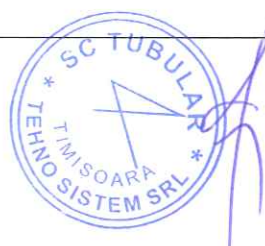
ACCOMPLISHMENT DATE – 18 months.

no.	Activity	Month																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Drafting the feasibility study	X																	
2	Preparation of the tendering documentation and tender for the technical and execution project		X	X															
3	Public tender			X	X	X	X												
4	Designing, execution details							X	X										
5	Work performance									X	X	X	X	X	X	X	X	X	X
6	Tests and final acceptance																		X



## CAPACITIES IN PHYSICAL UNITS AND VALUES

Item no.	Denomination	Value (including 19 % V.A.T.)
		Thous. lei
1	2	
<b>I – WORKS OF CONSTRUCTIONS AND INSTALLATIONS</b>		
1	Mounting of water aeration installation, fountain type aerator – 10 pcs	79,171
2	Mounting of water aeration installation, injector type aerator – 10 pcs.	83,836
3	Cascades - 3 pcs.	74,523
4	Photovoltaic panels	200,262
5	De-cogging and sanitation of shores–L= 150 m	46,589
6	Profiling of the shore in the social gathering areas and in the pontoon building areas – length 150 m.	23,279
7	Shore protection by laying out geo-textile on the embankment – length 150 m.	27,934
8	Birds observatory – 1 piece	107,120
9	Floating pontoons – 3 pieces, size 3x4 m.	83,824
10	Pavilion in octagonal shape – surface at soil of minimum 40 sq.m – 1 pcs	135,053
11	Gazeboes with surface on soil of minimum 16 sq.m – 2 pieces.	41,912
12	Urban furniture	93,153
13	Info-kiosk containing 6 pieces of information boards with sizes 100x80 cm – 1 piece.	18,635
14	Infopoint – 2 pieces.	16,315
15	Pedestrian wood bridge – 1 piece with the length of 10 m.	51,230
16	Playing area	44,244
17	Area of open air sports equipment	69,853
18	Ornamental trees 20 pieces	5,177
19	Hedge for delimiting the spaces used 50 m.	4,201
20	Platform for selective collection of waste, including 4 containers	23,741
21	Study concerning “Role of the by-pass channels HCN232 and HCN305	46,577
<b>TOTAL</b>		<b>1.276,625</b>





## CHAP.8. APPROVALS AND AGREEMENTS OF PRINCIPLE

- Town-Planning Certificate
- Report of the National Agency of Environmental Protection

## CHAP.9. ANNEXES

- Town-Planning Certificate
- LAND BOOK EXCERPT
- Report of the National Agency of Environmental Protection

Project Manager,  
Elekeş Mihai, Dipl. Eng.



ROMANIA

TIMIȘ COUNTY

JIMBOLIA LOCAL COUNCIL

No. 2620 of March 23<sup>rd</sup>, 2017

**TOWN PLANNING CERTIFICATE**

**No. 84 of March 23<sup>rd</sup>, 2017**

In order to obtain the building permit for the work:

**AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN  
THE LAKES AREA IN JIMBOLIA**

Following the letter sent by JIMBOLIA TOWN HALL by DARIUS POSTELNICU – Mayor with office in. Timis County, JIMBOLIA, Str. TUDOR VLADIMIRESCU Nr. 81, bl. -, sc. -, et. -, ap. -, phone number -, email address -, registered under no. 2620 on March 23<sup>rd</sup>, 2017.

For the real estate - land and / or construction - located in TIMIȘ County, Town of JIMBOLIA, zip code 305400, LAND IN THE BUILT-UP AREA OF JIMBOLIA - RECREATION AREA MOORS, bl. -, sc. -, et. -, ap. -, identified by LR no. 400673 Jimbolia, LR no. 400669 Jimbolia, LR no. 400668 Jimbolia, LR no. 400667 Jimbolia, LR no. 400666 Jimbolia, LR no. 400664 Jimbolia, LR no. 400663 Jimbolia, LR no. 400662 Jimbolia, LR no. 400661 Jimbolia, LR no. 400660 Jimbolia, LR no. 400659 Jimbolia, LR no. 400658 Jimbolia, LR no. 400657 Jimbolia, LR no. 400656 Jimbolia,

Based on the regulations of the town planning documentation no. 41032/ 010/a, General Town Planning, approved by the Decision of Jimbolia Local Council no. 15/ February 18, 1999,

In accordance with the provisions of Law no. 50/ 1991 concerning the authorizing of the execution of construction works, as further amended and supplemented,

**IT IS CERTIFIED :**

**1. LEGAL STATUS**

Lands located in the built-up area of the town, under the property of the TOWN OF JIMBOLIA, identified by LR no. 400673 Jimbolia, LR no. 400669 Jimbolia, LR no. 400668 Jimbolia, LR no. 400667 Jimbolia, LR no. 400666 Jimbolia, LR no. 400664 Jimbolia, LR no. 400663 Jimbolia, LR no. 400662 Jimbolia, LR no. 400661 Jimbolia, LR no. 400660 Jimbolia, LR no. 400659 Jimbolia, LR no. 400658 Jimbolia, LR no. 400657 Jimbolia, LR no. 400656 Jimbolia,

**2. ECONOMIC STATUS**

Present day status: MOORS, UNPRODUCTIVE LAND AND ACCESS ROADS IN THE BUILT-UP AREA TO THE TOWN OF JIMBOLIA

Proposed status: AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA



SDA ELENA



### 3. TECHNICAL STATUS

Drafting a technical documentation for obtaining the building permit for AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA with the observance of all regulatory documents in force on construction works and the provisions of the Local Town Planning Regulation within General Town Planning endorsed by Timis County Council with the Endorsement no. 8 of April 4, 2000.

The provisions of the Civil Code on neighboring areas and accessing the public roads will be observed.

The building height in that area is Ground floor, the maximum height of the construction is ...m, the Land Occupancy Percentage (LOP) is ...%, the Land Use Coefficient (LUC) is..., the withdrawals by comparison to the land limits are ...m north, ...m south, ...m east, and...m west.

This Town Planning Certificate can be used for the declared purpose, in view of obtaining the building permit for the work named:

### AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA

**THE TOWN PLANNING CERTIFICATE DOES NOT REPLACE THE BUILDING / DISMANTLING PERMIT AND DOES NOT GRANT THE RIGHT TO ENGAGE IN CONSTRUCTION WORKS.**

### 4. OBLIGATIONS OF THE HOLDER OF TOWN PLANNING CERTIFICATE

For drafting the documentation on authorizing the execution of construction works, be they building / dismantling, the petitioner will send a request to the competent environment protection authority: Timis Environment Protection Agency with office in Timisoara, Str. Liviu Rebreanu nr. 18-18A.

For the enforcement of the Council Directive 85/ 337/ EEC (EIA Directive) on assessing the effects of certain public and private projects on the environment, altered by Council Directive 97/ 11/ CE and by European Council and Parliament Directive 2003/ 35/ EC on public participation in drafting certain plans and programs in connection to the environment and modifying, as regards the public participation and access to justice, of Directive 85/ 337/ EEC and Directive 96/ 61/ EC, by the town planning certificate, the petitioner is informed on the obligation to contact the territory environment authority for it to analyze and decide, as applicable, including / not including the project of public / private investment in the list of projects subject to assessment of environment impact.

When applying the provisions of Council Directive 85/ 337/ EEC, the procedure of issuing the environment agreement, the competent environment protection authority sets out the mechanism of ensuring public consultation, centralization of public options and formulation of official stand point in connection to achieving the investment in agreement with the public consultation results.

In those conditions,

- After receiving this town planning certificate, the holder is bound to go to the competent environment protection authority for the initial assessment of the investment and setting out the requirement of assessing its effects on the environment. As consequence of the initial assessment of the investment, the administrative document of the competent environment protection authority will be issued.
- If the competent environment protection authority sets out the need to assess the effects of investment on the environment, the petitioner is bound to notify that to the competent public administration authority in connection to maintaining the petition on authorizing the execution of construction works.
- If after issuing the town planning certificate or during the development of the assessment procedure of investment effects on environment, the petitioner waives the intention to achieve the investment, it is bound to notify the competent public administration authority of that.



SIMOC ANDA ELBESCU  
Inalbat de Consiliul Local al  
Jimbolia, nr. 1548/2007

**Town Planning Certificate no. 84 of March 23<sup>rd</sup>, 2017**

**5. APPLICATION TO ISSUE THE BUILDING / DISMANTLING PERMIT will be accompanied by the next documents:**

- a) Town Planning Certificate;
- b) Proof of title deed on the real estate, be it land and / or constructions or, as applicable, cadastral plan excerpt brought up to date and the Land Registry excerpt for information purposes, brought up to date, unless otherwise provided by the law (legalized copy);
- c) technical documentation, as applicable;

**Technical Documentation for obtaining the Building Permit (*checked*)**

d) Endorsements and agreements set out by the town planning certificate

*d.1 Endorsements and agreements on the town utilities and infrastructure:*

water supply	sewage
electricity supply	Heat supply
natural gas	phone lines
garbage removal	urban transportation

*(Note of the translator: none checked)*

*d.2. Endorsements and agreements on*

firefighting and prevention (not checked)	civil defense (not checked)	population health (not checked)
--	--------------------------------	------------------------------------

*d.3 Specific endorsements / agreements of the central public administration and / or their decentralized departments: unfilled*

*d.4 Specialty studies:*

**FEASIBILITY STUDY**

- e) Administrative document of the competent environment protection authority;
- f) Proof for the payment of the legal charges;

Payment documents of the next charges (copy):  
*Unfilled*

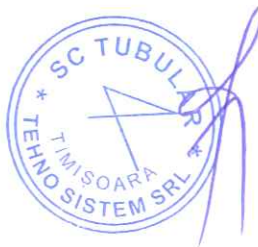
**This town planning certificate is valid for 12 months as of the date of its issuance.**

MAYOR  
DARIUS POSTELNICU  
*Official round seal of JIMBOLIA TOWN,  
TIMIS COUNTY, ROMANIA  
Illegible signature*

SECRETARY  
IONEL NITOI  
*Illegible signature*

HEAD ARCHITECT  
EUGEN GAIN  
*Illegible signature*

Paid the fee of EXEMPTED, according to receipt series *unfilled*, no. *unfilled* of *unfilled*  
This town planning certificate was sent to the direct petitioner on **March 23<sup>rd</sup>, 2017.**



SIMOC ANDA GERA  
Graduate Engineer  
Limba oficiala si profesionala  
Aut. nr. 15462/2017



Translation from Romanian language

In accordance with the provisions of the Law no. 50/1991 on the authorization of the execution of construction works, as further amended and supplemented,

THE VALIDITY OF THE TOWN-PLANNING CERTIFICATE NO. 84 OF MARCH 23<sup>rd</sup>, 2017 IS  
EXTENDED

from March 23<sup>rd</sup>, 2018 to March 23<sup>rd</sup>, 2019

After this date, a new extension of validity is not possible, the applicant will obtain, according to the law, another Town Planning Certificate.

MAYOR,  
POSTELNICU DARIUS  
(Illegible signature)  
(Round stamp reading: ROMANIA, COUNTY OF  
TIMIȘ, JIMBOLIA TOWN)

REGISTRAR,  
NIȚOI IONEL  
(Illegible signature)

Head Architect  
GAIN EUGEN  
(Illegible signature)e

Date of extension of validity: February 26<sup>th</sup>, 2018

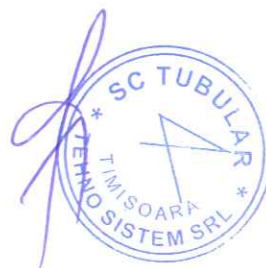
Paid tax EXEMPT, according to the receipt series ...., no ..... of the date .....

Sent to the applicant on February 27<sup>th</sup>, 2018 directly.

\*\*\*\*\* end of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA certified official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.

SIMOC ANDA-ELENA  
Traducător și Interpret Autorizat  
Limba engleză și franceză  
Aut. Nr. 7546/2007



Logo of  
National Land  
Improvement  
Agency

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT  
NATIONAL LAND IMPROVEMENT AGENCY  
Territorial Land Improvement Branch Timiș- Lower Mureș

Str. C. Brediceanu, nr.8, et. III-IV  
Timișoara, Postcode 300011  
Tax Identification Number: 29485877

Telephone: 0256.203.230  
Fax: 0256.494.356  
E-mail: timis@anif.ro



Timișoara, June 13<sup>th</sup>, 2017  
No. 246

## JIMBOLIA TOWN

Ref: Technical Agreement of the National Land Improvement Agency

After analyzing the documentation submitted by you and registered with the **National Land Improvement Agency - Territorial Land Improvement Branch Timiș- Lower Mureș**, Address: Timișoara, str. C. Brediceanu, nr.8, Timiș County, Tel: 0256-203230, Fax: 0256-494356, E-mail: [timis@anif.ro](mailto:timis@anif.ro), with no. 246 of June 6<sup>th</sup>, 2017, in order to issue the Technical Agreement of the National Land Improvement Agency for obtaining of the building permit regarding the investment "Aquatic habitat restoration and recreation areas development within the lakes area in Jimbolia" according to the Town Planning Certificate with no. 84 of March 23<sup>rd</sup>, 2017 on the surface of 932.065 square meters, is located in the administrative area of Jimbolia, Timiș County, parcels with cadastral number 10043, LR no. 400656, cadastral number 10048, LR no. 400661, cadastral number 10050/1, LR no. 400668, cadastral number 400664, LR no. 400664, cadastral number 10054, LR no. 400667, cadastral number Ngl 92/2, LR no. 400669, cadastral number Ngl 105/1, LR no. 400673, cadastral number 10046, LR no. 400659, cadastral number 10049, LR no. 400662, cadastral number 10051, LR no. 400663, cadastral number 10045, LR no. 400658, cadastral number 10044, LR no. 400657, cadastral number 10047, LR no. 400660, cadastral number 10053, LR no. 400666, unproductive land in the built-up area, yards buildings, grazing lands inside the built-up area, unproductive land outside the built-up area, still waters inside the built-up area, other entities inside the built-up area, the following are ascertained:

- a. The land that is the subject of the application is located in the Checea Jimbolia Pump Drainage System, code 1189, arrangement under Territorial Land Improvement Branch Timiș- Lower Mureș management, National Land Improvement Agency.

In view of the above, the Technical Agreement of National Land Improvement Agency for the above investment is issued subject to the following conditions:

1. During the execution of the works, the legal provisions regarding the protection areas for the land improvement works, in accordance with the Law on Land Improvement no. 138/2004 with as further amended and supplemented and with Order no. 227 / 31.03.2006.
2. Prior to the commencement of the works, the name, address, position and telephone of the technical representative will be notified to the Territorial Land Improvement Branch Timiș- Lower Mureș, National Land Improvement Agency, which may be contacted in unforeseen circumstances;
3. The land improvement works, accidentally affected during the execution of the works, will be brought to the initial parameters of operation by the beneficiary of the agreement; the reception of the works will require the presence of the Territorial Land Improvement Branch Timiș- Lower Mureș representative, National Land Improvement Agency.



SIMOC ANDA-ELINA  
Inalțarea și amenajarea  
Lămpa energiei solare  
Aut. Nr. 7546/2007



Translation from Romanian language

4. For any damage that may occur during the execution or during the exploitation of the land developments in the area due to non-observance of the terms of the agreement or of the technical solutions presented for obtaining it, the beneficiary of the technical agreement is accountable;
5. Observance of the Order of the Minister of Agriculture, Forests and Rural Development no. 227/2006, which prohibits the execution of constructions (buildings, installations of any kind, fencing, annexes, etc.) in the protection area adjacent to the land improvement infrastructure

**JIMBOLIA TOWN**

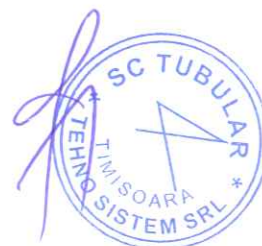
Jimbolia Town, str. Tudor Vladimirescu, nr.18, Timiș County

(Round stamp applied: National Land Improvement Agency, Territorial Land Improvement Branch Timiș- Lower Mureș, Timișoara, Romania)

\*\*\*\*\* end of translation \*\*\*\*\*

The undersigned **SIMOC ANDA ELENA** certified official translator and interpreter for **ENGLISH / FRENCH** languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.

SIMOC ANDA ELENA  
Traducător și Interpret Autorizat  
Limba engleză și franceză  
Aut Nr 7546/2002





Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54357
Day	13
Month	March
Year	2018

Check code  
100056103693

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400656 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10043	55,934	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Stamp applied HANU SOFIA- Assistant registrar

Illegible signature

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400656 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10043	55,934	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	unproductive	YES	55,934	-	-	-	unproductive land (tailings dams)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
SOFIA HANU  
*Illegible signature*

Advisor  
Stamp applied: BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

Document comprising personal data, protected by the provisions of the law 677/2001  
Extracts for on-line information at [epay.ancpi.ro](http://epay.ancpi.ro)

Page 2 of 2  
Form 1.1 version

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54356
Day	13
Month	March
Year	2018

Check code  
100056103687

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400657 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10044	2,491	

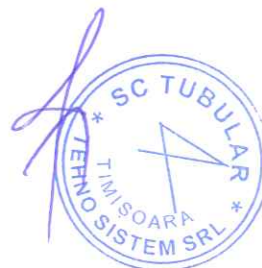
**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council no. 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration , Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400657 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
Top: 10044	2,491	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	non- productive	YES	2,491	-	-	10044	unproductive land (tailings dam)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
MONA – SANDA KOVACS  
*Illegible signature*

Advisor  
*Stamp applied* BERLOVAN MALVINA - Advisor  
*Illegible signature*

*Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment Timiș - TIMIȘOARA*

Date of issuance: 14 March 2018

Document comprising personal data, protected by the provisions of the law 677/2001  
Extracts for on-line information at [epay.ancpi.ro](http://epay.ancpi.ro)

Page 2 of 2  
Form 1.1 version

\*\*\*\*\* End of translation \*\*\*\*\*

*The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.*





Cadastral and Land Registration Office - TIMIȘ  
Cadastral and Land Registration Compartment - TIMIȘOARA

Request no.	54355
Day	13
Month	March
Year	2018

Check code  
100056103683

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400658 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10045	125,046	

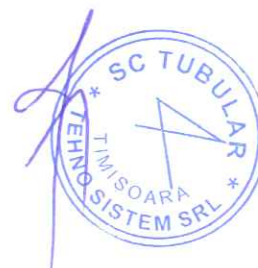
**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400658 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10045	125,046	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	Dead waters	YES	125,046	-	-	10045	Moor

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar

MARIA GABRIELA DRĂGHIA  
*Illegible signature*

Advisor

Stamp applied: BERLOVAN MALVINA - Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIS, Cadastre and Land Registration Compartment of Timis - TIMISOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastral and Land Registration Office - TIMIȘ  
Cadastral and Land Registration Compartment - TIMIȘOARA

Request no.	54354
Day	13
Month	March
Year	2018

Check code  
100056104110

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400659 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10046	65,816	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400659 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10046	65,816	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	unproductive	YES	65,816	-	-	10046	unproductive land (borrow pit)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law  
It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
MARIA GABRIELA DRĂGHIA  
*Illegible signature*

Advisor

Stamp applied: BERLOVAN MALVINA - Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIS, Cadastre and Land Registration Compartment of Timis - TIMISOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54353
Day	13
Month	March
Year	2018

Check code  
100056103653

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400660 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10047	6,955	

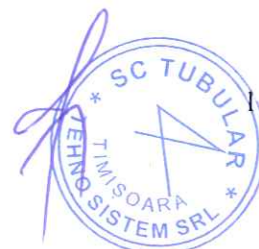
**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE DOMAIN, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400660 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10047	9,955	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	road	YES	6,955	-	-	10047	technological road

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law. It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
LILIANA-CAMELIA MICIULICĂ  
*Illegible signature*

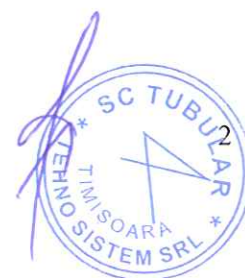
Advisor  
Stamp applied BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastral and Land Registration Office - TIMIS  
Cadastral and Land Registration Compartment - TIMISOARA

Request no.	54352
Day	13
Month	March
Year	2018

Check code  
100056103592

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
*Land Register no. 400661 Jimbolia*

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10048	22,456	

**Constructions**

No.	Cadastral number No.	Address	Notes/references
A1.1	CAD:C1 Top: 10048	Jimbolia, Timis County	Industrial buildings

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

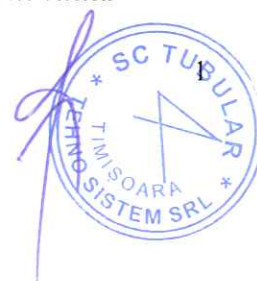
Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1, A1.1
1) JIMBOLIA TOWN- PRIVATE DOMAIN, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Stamp applied BOLFA ELENA- Assistant registrar  
Illegible signature

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA





Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10048	22,456	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	Yards buildings	YES	22,456	-	-	10048	

Data regarding the constructions

No.	Number	Construction destination	Surface* (square meters)	Legal situation	Notes/references
A1.1	CAD:C1 Top: 10048	Industrial and urban buildings	-	With documents	Industrial buildings.

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
ELENA BOLFA  
*Illegible signature*

Advisor  
*Stamp applied* BERLOVAN MALVINA Advisor  
*Illegible signature*

*Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA*

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

*The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.*





Cadastral and Land Registration Office - TIMIS  
Cadastral and Land Registration Compartment - TIMISOARA

Request no.	54351
Day	13
Month	March
Year	2018

Check code  
100056103645

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400662 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10049	55,689	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE DOMAIN, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA





Land Register no. 400662 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
Top: 10049	55,689	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	Dead water	YES	55,689	-	-	10049	moor

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
MARIA-DANIELA ANCA  
*Illegible signature*

Advisor  
Stamp applied: BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

Document comprising personal data, protected by the provisions of the law 677/2001  
Extracts for on-line information at [epay.ancpi.ro](http://epay.ancpi.ro)

Page 2 of 2  
Form 1.1 version

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54350
Day	13
Month	March
Year	2018

Check code  
100056103631

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
*Land Register no. 400663 Jimbolia*

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10051	100,189	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIS, Cadastre and Land Registration Compartment of Timis - TIMISOARA





Land Register no. 400663 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
Top: 10051	100,189	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	Dead waters	YES	100,189	-	-	10051	moor

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
GIORGIANA MARIA Lilea

Stamp applied: LILEA GIORGIANA MARIA

Assistant registrar

Illegible signature

Advisor

Stamp applied BERLOVAN MALVINA

Advisor

Illegible signature

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.





Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54349
Day	13
Month	March
Year	2018

Check code  
100056103624

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
*Land Register no. 400664 Jimbolia*

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia  
Topographic no.: 10052

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	400664	11,948	

**Constructions**

No.	Cadastre number No.	Address	Notes/references
A1.1	400664-C1	Jimbolia, Timis County	Surface built on ground: 117 sqm; Administrative building – aquaculture activity
A1.2	400664-C2	Jimbolia, Timis County	Surface built on ground: 103 sqm; Appurtenance

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision no. Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired legally, current share 1/1	A1
	1) JIMBOLIA TOWN- PRIVATE PROPERTY - under the management of Jimbolia Local Council	
	Notes: (derived from conversion land register 9014 Jimbolia)	
225451 / 15 December 2015		
Administrative document no. Construction erection registration certificate no. 9791, of 11 December 2015 issued by the Jimbolia Town Hall		
B2	Registration, OWNERSHIP title, acquired legally, current share 1/1	A1.1, A1.2
	1) JIMBOLIA TOWN- Tax code: 2502763	

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA





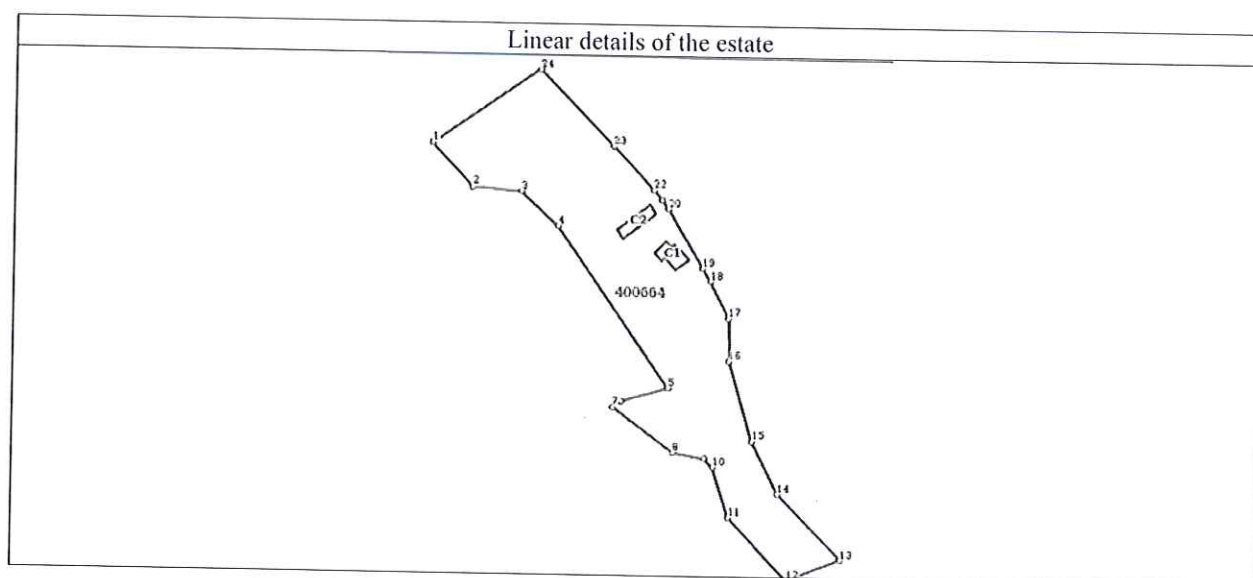
Land Register no. 400664 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
400664	11,948	

\* The surface is determined in the Stereo 70 projection plan.



Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	Grazing land	YES	10,531	-	-	10052	unfenced land inside the built-up area unfenced
2	Yards Buildings	YES	1,417	-	-	-	land inside the built-up area enclosed by a wire fence

Data regarding the constructions

No.	Number	Construction destination	Surface* (square meters)	Legal situation	Notes/references
A1.1	400664-C1	Administrative and social cultural buildings	117	With documents	Surface built on ground: 117 sqm; Administrative building for aquaculture activity
A1.2	400664-C2	Appurtenance buildings	103	With documents	Surface built on ground: 103 sqm; Appurtenance



Land Register no. 400664 Commune / Town / Municipality: Jimbolia

Segments length

1) The values of the segments length are obtained from projection in the plan

Starting point	End point	Segment length**(meters)
1	2	28,587
2	3	24,318
3	4	24,563
5	6	24,274
7	8	37,492
9	10	5,772
11	12	41,496
13	14	43,991
15	16	40,405
17	18	19,852
19	20	33,126
21	22	6,401
23	24	51,776

Starting point	End point	Segment length**(meters)
4	5	95,113
6	7	5,069
8	9	15,541
10	11	25,314
12	13	27,962
14	15	28,551
16	17	20,428
18	19	7,607
20	21	5,073
22	23	28,885
24	1	63,562

\*\* The length of the segments is determined in the Stereo 70 projection plan and rounded to 1 millimetres.

\*\*\* The distance between points is made up of the cumulated segments smaller than 1 millimetres.

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
MIHAELA OSZLONYAI  
Illegible signature

Advisor  
Stamp applied: BERLOVAN MALVINA Advisor  
Illegible signature

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.







Cadastral and Land Registration Office - TIMIS  
Cadastral and Land Registration Compartment - TIMISOARA

Request no.	54348
Day	13
Month	March
Year	2018

Check code  
100056103621

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
*Land Register no. 400666 Jimbolia*

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10053	5,163	

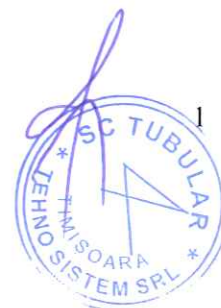
**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council no. 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA



Land Register no. 400666 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
Top: 10053	5,163	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	others	YES	5,163	-	-	10053	unproductive land (tailings dams)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented may be modified according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
DANIELA MARCOV  
Stamp applied: MARCOV DANIELA  
Assistant registrar  
Illegible signature

Advisor  
Stamp applied BERLOVAN MALVINA  
Advisor

Illegible signature

Round stamp applied: National Agency for Cadastral and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMONA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.







Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54347
Day	13
Month	March
Year	2018

Check code  
100056103563

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
*Land Register no. 400667 Jimbolia*

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10054	178,178	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
	1) JIMBOLIA TOWN- PRIVATE DOMAIN, - In the administration of the Jimbolia Local Council	
	Notes: (derived from conversion of the Land Register 9014 Jimbolia)	

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Stamp applied HANU SOFIA- Assistant registrar  
Illegible signature

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA



Land Register no. 400667 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
Top: 10054	178,178	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	others	YES	178,178	-	-	10054	land for industrial purposes (clay pit)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
SOFIA HANU  
*Illegible signature*

Advisor  
*Stamp applied* BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.







Request no.	54346
Day	13
Month	March
Year	2018

Check code  
100056103558

**LAND REGISTER EXCERPT**  
for  
**INFORMATION**  
Land Register no. 400668 Jimbolia

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9014 Jimbolia

Land inside the built-up area  
Address: Jimbolia, Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	Top: 10050/1	68,800	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67272 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9014 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastral and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA



Land Register no. 400668 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastré number	Surface (square meters)*	Notes/references
Top: 10050/1	68,800	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	unproductive	YES	68,800	-	-	10050/1	unproductive land (tailings dams)

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
MONA – SANDA KOVACS  
*Illegible signature*

Advisor  
Stamp applied: BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

The undersigned SIMOC ANDA ELENA sworn official translator and interpreter for ENGLISH / FRENCH languages, based on the Translation License no. 7546/2002 and renewed on 2007 issued by the Romanian Ministry of Justice, I hereby certify that this translation from Romanian into English is true and accurate, that the source text is translated in full, without omissions and that the meaning and contents of the document were not modified by translation.







Cadastral and Land Registration Office - TIMIS  
Cadastral and Land Registration Compartment - TIMISOARA

Request no.	54345
Day	13
Month	March
Year	2018

Check code  
100056103555

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
**Land Register no. 400669 Jimbolia**

Real estate under art. 3 paragraph (1) of the Law no.17 / 2014

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9012 Jimbolia

Land outside the built-up area  
Address: Timis County

No.	Cadastral number Topographic number	Surface* (square meters)	Notes/references
A1	CAD: Ng1 92/2	69,400	

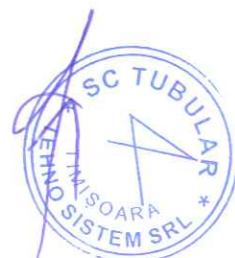
**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67263 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9012 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastral and Land Registration Office - TIMIȘ, Cadastral and Land Registration Compartment of Timiș - TIMIȘOARA



Land Register no. 400669 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastr number	Surface (square meters)*	Notes/references
CAD: Ngl 92/2	69,400	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	non- productive	NO	69,400	-	-	Ngl 92/2	unproductive land

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar

MARIA GABRIELA DRĂGHIA

*Illegible signature*

Advisor

Stamp applied: BERLOVAN MALVINA Advisor

*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

\*\*\*\*\* End of translation \*\*\*\*\*

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Cadastre and Land Registration Office - TIMIS  
Cadastre and Land Registration Compartment - TIMISOARA

Request no.	54344
Day	13
Month	March
Year	2018

Check code  
100056103098

**LAND REGISTER EXCERPT**  
*for*  
**INFORMATION**  
**Land Register no. 400673 Jimbolia**

Immovable property under art. 3 paragraph (1) of the Law no.17 / 2014

**A. 1<sup>st</sup> PART. ASSET DESCRIPTION**

Former Land Register no.: 9012 Jimbolia

Land outside the built-up area  
Address: Timis County

No.	Cadastre number Topographic number	Surface* (square meters)	Notes/references
A1	Cad: Ngl 105/1	164,000	

**B. 2<sup>nd</sup> PART. OWNERS AND DOCUMENTS**

Registrations regarding the ownership right and other real estate rights		References
67263 of 15 November 2006		
Decision of the Town Local Council 200/2005;		
B1	Registration, OWNERSHIP title, acquired through Establishment, current share 1/1	A1
1) JIMBOLIA TOWN- PRIVATE PROPERTY, - In the administration of the Jimbolia Local Council		
Notes: (derived from conversion of the Land Register 9012 Jimbolia)		

**C. 3<sup>rd</sup> PART ENCUMBRANCES**

Registrations regarding the dismemberments of the ownership title, real guarantee rights and burdens	References
NONE	

Round stamp applied: National Agency for Cadastre and Land Registration , Cadastre and Land Registration Office - TIMIS, Cadastre and Land Registration Compartment of Timis - TIMISOARA



Land Register no. 400673 Commune / Town / Municipality: Jimbolia

Annex no. 1 to the 1<sup>st</sup> Part

Land

Cadastral number	Surface (square meters)*	Notes/references
Cad: Ngl 105/1	164,000	

\* The surface is determined in the Stereo 70 projection plan.

Linear details of the estate
The geometry for this estate was not found.

Data regarding the land

No.	Destination class	Inside the built-up area	Measured surface* (square meters)	Field no.	Plot no.	Topographical number	Notes/references
1	unproductive	YES	164,000	-	-	Ngl 105/1	

I hereby certify that this excerpt is entirely in accordance with the positions in force of the original Land Register kept by this office.

This Land Registration Excerpt is valid for the authentication of the legal documents to the Notary Public of the legal documents by which real estate right are extinguished as well as for debate of the successions, and the information hereby presented are subject to modifications, according to the conditions provided by the law.

It was paid the tariff of RON 20, internal receipt no. 5059056 of 13 March 2018, in amount of 20, for the service of real estate advertising with the code no. 272.

Day of resolution  
13 March 2018

Assistant registrar  
LILIANA-CAMELIA MICIULICĂ  
*Illegible signature*

Advisor  
Stamp applied: BERLOVAN MALVINA Advisor  
*Illegible signature*

Round stamp applied: National Agency for Cadastre and Land Registration, Cadastre and Land Registration Office - TIMIȘ, Cadastre and Land Registration Compartment of Timiș - TIMIȘOARA

Date of issuance: 14 March 2018

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Extracts for on-line information at [epay.ancpi.ro](http://epay.ancpi.ro)

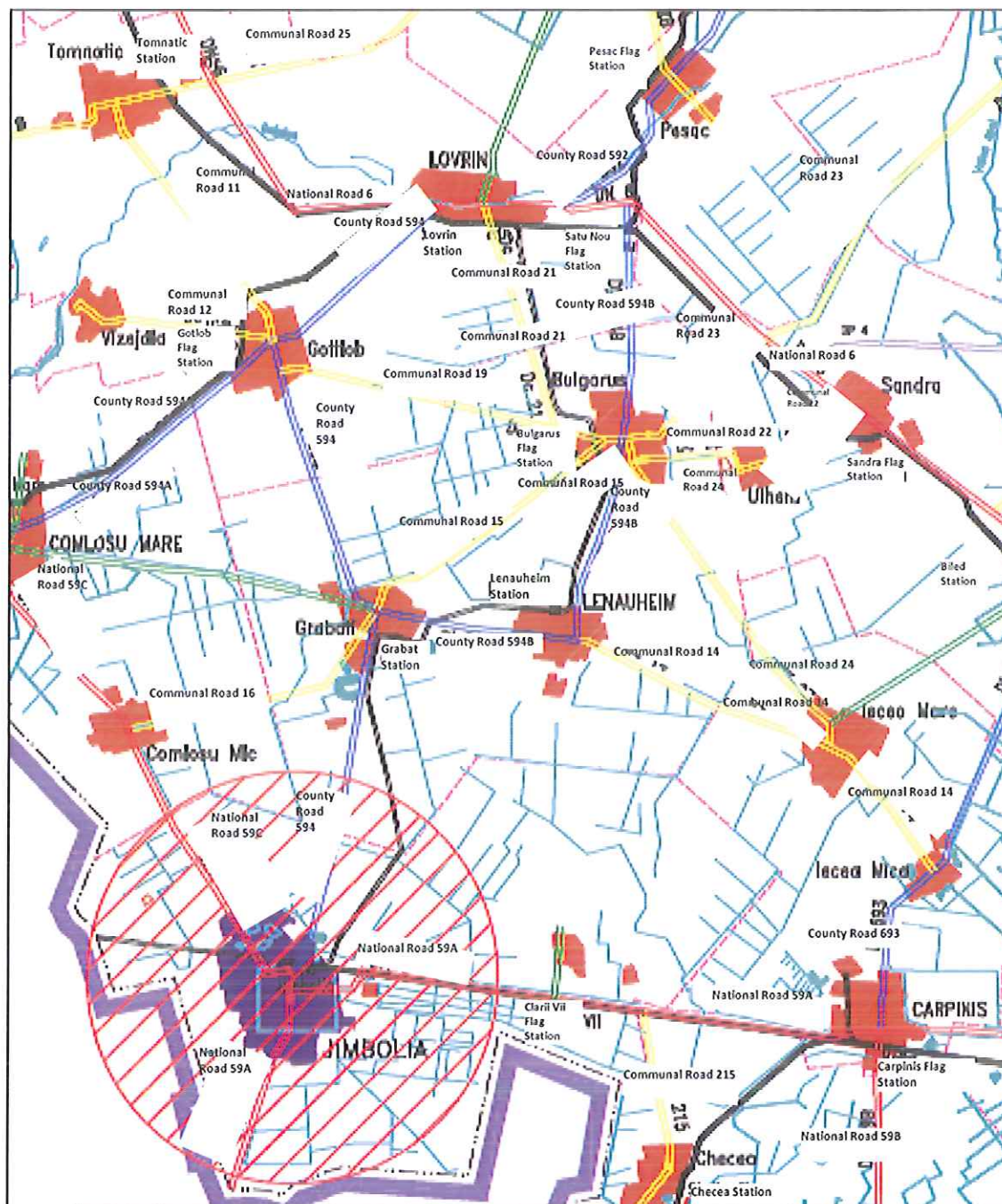
Page 2 of 2  
Form 1.1 version

\*\*\*\*\* End of translation \*\*\*\*\*

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Checked by	Name	Signature	Requirement	Report/Expertise no./date
<b>SC TUBULAR TEHNOSISTEN SRL</b>				Beneficiary: Jimbolia Town Hall Location: Jimbolia, Timis County
PROJECT TITLE: AQUATIC HABITAT RESTORATION AND RECREATION AREAS DEVELOPMENT WITHIN THE LAKES AREA IN JIMBOLIA				Project no. 01/2017
DRAWING TITLE: DEVELOPMENT SITE PLAN				Stage FS
Drawing no. Ed 01				

