

Environmental Protection

Contents

| | |
|--|----|
| Situation Analysis | 2 |
| Historic Preservation | 2 |
| Nature Conservation, Protected Areas and Biodiversity..... | 3 |
| National Parks | 4 |
| Water Management | 4 |
| Surface Waters | 4 |
| Inland Inundation | 5 |
| Groundwater..... | 5 |
| Precipitation..... | 5 |
| Drinking Water | 6 |
| Wastewater Management..... | 6 |
| Solid Waste Collection and Handling..... | 8 |
| Stakeholder Analysis | 10 |
| Governmental Institutions, Authorities | 10 |
| Government office for Somogy County | 10 |
| Southern Transdanubian Water Management Directorate | 10 |
| South-Transdanubian Regional Development Agency..... | 10 |
| National Parks | 10 |
| Directorate of the Duna-Drava National Park | 10 |
| Balaton Uplands National Park Directorate..... | 11 |
| Public Utilities | 11 |
| Transdanubian Regional Waterworks Corporation (DRV Zrt.)..... | 11 |
| KAVÍZ: Waterworks and sewage of Kaposvár Ltd..... | 11 |
| Regional communal solid waste handling system of South-Balaton and Sió-valley..... | 11 |
| Kapos-menti (Kapos region) waste-management system | 11 |
| Mecsek-Drava regional solid waste handling system | 12 |
| ZALAISPA regional waste-management Zrt..... | 12 |
| SWOT Analysis | 13 |
| Identification of Key Challenges | 14 |
| Cross-sectoral linkage..... | 15 |
| Agriculture | 15 |
| Regional Development | 15 |
| Transport and tourism | 15 |
| Energy Sector..... | 16 |
| List of publications used: | 16 |

Situation Analysis

In general, the quality of the environment in Somogy County is good. Due to the far location of Somogy from the economic centrum territory, the county has rich in wetlands and forests and the diversity of landscape and nature are outstanding. The development opportunities of tourism are diverse, due to the heterogeneity of natural and architectural supply. The county hasn't got significant mineral resources. Gravel and sand quarries are located on the riverside of Drava. The territory is rich in surface waters and underground waters and even thermal water as well. Drava is the only remarkable river as a southern border of the county; Northerly, Lake Balaton separates Somogy from its northern neighbour.

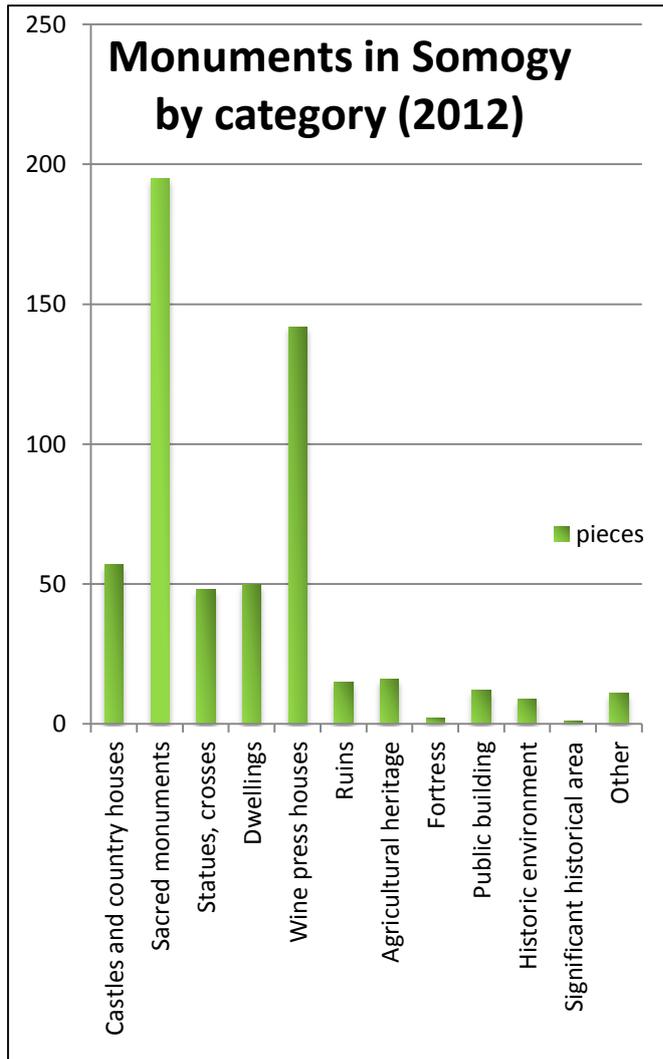
Somogy belongs to the less compromised areas in respect of environmental harm caused by air-pollution and traffic noise. But next to the big traffic corridors (e.g. motorway M7) and in the bigger settlements, the level of air-pollution is higher than the average, because of the emission of cars. While in rural territories, the level of particulates and dust can be high periodically. Brown field areas, former industrial and military bases suffer from serious environmental damages; these territories need to be recultivated. Unused industrial areas are concentrated in bigger towns.

Inland inundation and flood represent a real environmental risk, although the potentiality of them is lower than the country average, but on the riversides the danger is real. Settlements without sewerage affected by inland inundations the most, because the drainage of storm water is not solved and that's why the flooding of wastewater storages is a common, serious problem. This problem was intensified by the extreme weather of the past few years, which was manifested in extremely big amount of rainfalls within a short timeframe. This issue was partly solved by sewerage and water drainage system projects under the Dél-Dunántúli Operative Programme.

Beside the protected natural areas Somogy is rich in mineral and thermal water and historical-architectural monuments as well. It can be determined about the landscape-forming factors that Somogy belongs to the most diverse landscape-capability provider areas in Hungary. The county is very rich in natural values region wide and nationwide too. Rare and valuable plant- and animal species can be find in the whole county, to preserve these species Somogy has 39 617 acres of nationally significant protected areas.

Historic Preservation

Most of the protected objects were built in the XVIII. and XIX. century; erlier-built objects are mostly ruins.



1. figure Monuments in Somogy by category (2012)

In 2014, the number of protected monuments was 542. Somogy belongs to the upper mid-range category with this quantity (In Hungary, there are 10 965 recorded monuments). Monuments are concentrated mainly in the settlements of Balatonberény, Kaposvár and Balatonkeresztúr, but Balatonberény stands out of them with its 90 protected wine-press houses (the total number of protected monuments are 92). These press houses give the 1/3 of the county's historically preserved monuments.

The condition of the protected buildings are not unitary, there are a lot in good condition; some of them are renovated and some of them go to rack a ruin and they cannot be saved any more.

Nature Conservation, Protected Areas and Biodiversity

The county is crowded with nationally significant territories, which are protected by law (national parks, landscape protection areas, nature conservation areas). Important parts of

two Hungarian national parks are situated in Somogy county (Duna-Drava NP, Balaton Uplands NP.) Undisturbed habitats are insured for some of the species (lakes, reservoirs, wetland marshes, moors, reeds, grasslands, wooded pastures). **Conjunction of the different climate belts in Somogy enhances the biological diversity of the county**, this diversity has a high importance for the around the whole county. The large territories of protected areas and the existing ecological networks can help to preserve the natural heterogeneity. Positive capability of Somogy, that it has the lowest population density in Hungary, so **the original flora has been preserved. Biota of wetlands and the avifauna are extremely rich**, but the small predators and rodents can be found everywhere as well. Flora and fauna at Lake Balaton is also significant, 50 fish species, 300 bird species lives there. Drava is also an important territory for the water-quality sensitive organisms. **Most of the domestic fish-species can be found in the river and Drava** has an important role in the migration and wintering of waterfowls. Predator fauna has been decreased, mostly the smaller predators remain. Otter is still lives there and fauna in the forests are also diverse.

Because of the aforementioned reasons, the protection of natural territories has a significant importance.

National Parks

The whole territory of the Duna-Dráva National Park is 16,6 km², thereof 4,7km² is specially protected. The county's proportion of the National Park is located mostly at the riverside of the Drava river, therefore beside the country-border (claim of the expansion of conservation cross-border cooperation are highlighted). A small part of the Balaton-Felvidéki National Park is situated in Somogy as well; the so called Kis-Balaton Landscape Protection Area lies here, which is an outstanding wetland in Europe.



2. figure map of Duna-Dráva National Park (DDNP Directorate, 2014)

Water Management

Surface Waters

The quality of surface waters is generally good, but the quality improvement will not be finalised till the prescribed EU deadline. The water quality of Lake Balaton had been

improved a lot due to the building of sewerage system. Spreading of agricultural best practises; the reduction of the usage of chemicals; and organic farming will cause further quality improvement in the lake. Beside this, the further building of the currently missing sewerage systems can help a lot too.

We introduce the following surface waters below:

Lake Balaton

Balaton is a shallow lake and because of this reason, it is so sensitive for the change of the hydro meteorological-factors, which affects its water balance. In fact, extreme situations can happen in a case of long-lasting difference of a factor from the average rate.

It is not allowed to use internal combustion engine-driven small boats and boats, the only exceptions are the authorities, they can use their motor-driven vehicles. The reason of the prohibition is environment protection on the one hand, but on the other hand it is important because of the preservation of the landscape, and the original Balaton-feeling as well.

River Drava

The river is apparently natural and untouched, but the reality is that it is very controlled. This manifests in the flood-protection objects located on both sides of the river, that's why the floodplain is limited. Hydroelectric stations on the Croatian side cause daily water level fluctuation and deepening of the river basin, which redounds aridity on other parts of the river basin. The acuteness of floods makes the predictability difficult, and it limits the usage of the potential defence methods. The catchment basin located mostly abroad.

River Kapos

Floods on Kapos are controlled by the reservoirs, which was built on Streamlet Deseda and Hársberki. In the direction of West from Kaposvár, between the territory of Kaposvár and Kaposújlak, a new flood-protection reservoir is planned.

Inland Inundation

Most of the territory of Somogy is not endangered by inland inundation, just a little part of the county is slightly endangered (Balatonboglár, Balatonlelle and on the riverside of Drava, between Somogyudvarhely and Barcs). Some valleys are affected by inundations too.

Groundwater

Under the surface, there are some subsurface layers, which contain cold and thermal water. The area of Somogy is sensitive in the sense of groundwater classification, but next to Lake Balaton and Kis-Balaton and next to the River Drava, groundwater is extremely vulnerable. These territories are recorded in the spatial planning document as well. Broad vulnerable territories are located on the area of Kaposvár and Nagyatád. Land use regulations cannot be changed on these territories, so the groundwater quality will not be declined in the future. In favour of the protection of the ground waters, the delimitation of catchment basins of surface waters is included in the spatial planning document.

Precipitation

In Hungary – and in Somogy too – the annual precipitation do not change a lot (aside from a few extreme years). Territorial dispersion cannot be expected, but temporal changes will be happen. In summer-time, the increase of the fall is expected, and depending on the level of the future temperature shift the water stream and the underground infiltration will be reduced.

The manifestation of winter precipitation will become rain, so the increase of water stream's caused erosion are predicted. Because of the outlined processes, it is necessary to be prepared to solve the water management problems of water abundance periods and droughts.

Drinking Water

In respect of the water quality, it is enough to examine the county capital's water supply system; Kaposvár can ensure its water supply from its own water basin. Running water supply is available almost everywhere in the county (the percentage of households with tap water is higher than the country average, and it shows a continuous improvement. In 2009 this rate exceeded 96%; the country average is just under 95%). Beside this fact, it is important to mention, that the occurrence of water-quality complaint is higher than the average, it is caused by the high level of chemical component (e.g. arsenic, manganese, ammonium, iron). In order to the improvement of the water-quality the implement of the Dél-Dunántúl water-quality improvement Program is indispensable, which affects 60 settlements in Somogy. For the implementation of this project, the EU has already contributed by the governmentally co-financed Operative Programme, called KEOP (Environment and Energy Operative Programme).

| Territorial Unit | 2000 | 2005 | 2010 | 2011 | 2012 |
|-----------------------|------|------|------|------|------|
| Baranya | 96,1 | 97,6 | 97,6 | 96,4 | 97,2 |
| Somogy | 92,1 | 95,9 | 94,6 | 94,0 | 93,2 |
| Tolna | 91,8 | 94,5 | 96,2 | 95,8 | 96,8 |
| Southern Transdanubia | 93,7 | 96,2 | 96,2 | 95,4 | 95,7 |
| National | 92,1 | 94,0 | 94,9 | 94,7 | 94,2 |

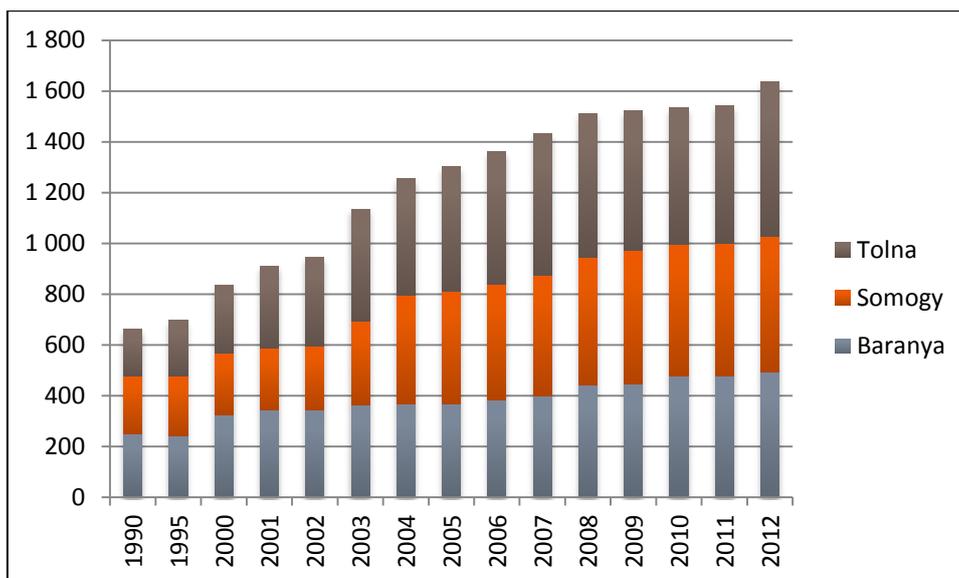
3. figure Rate of connected households to running water (HCSO)

In terms of the rate of the running water coverage it is noted, that this rate is the highest in the subregions of Kaposvár, Fonyód and Barcs (over 96%). Subregions, which have the lowest percentage in the county, are: Curgó, Kadarkút, Lengyeltóti. The low rate of Siófok (87,35%) is probably caused by the distortion of the recorded holiday properties.

Although the overall picture of water supply is great; the quality still needs to be improved, because of the chemical components, which exceed the threshold limit in some cases.

Wastewater Management

Because of the specificity of settlement patterns of Somogy, the small village areas have no sewage handling. Areas with sewerage system can be found on the Balaton holiday zone, riverside of Drava and on the urban territories.



4. figure Gap between households having tap water and households connected to sewer system: Length of the swere system per tap water network, meters (HCSO)

The gap between households having tap water and households connected to sewer system has a narrowing trend: since 2002, intensive growth has been observed. In the middle of the 2000's, the dynamism of this growth had been exceeded the expansion of the sewer system connected households, this means, that further expansion can be realised on the settlements, where sewer system already exists.

| Territorial Unit | 1990 | 2000 | 2005 | 2010 | 2011 | 2012 |
|-----------------------|------|------|------|------|------|------|
| Baranya | 248 | 325 | 367 | 476 | 477 | 493 |
| Somogy | 228 | 241 | 444 | 520 | 524 | 536 |
| Tolna | 186 | 270 | 490 | 539 | 540 | 606 |
| Southern Transdanubia | 224 | 279 | 425 | 508 | 510 | 535 |
| National total | 228 | 396 | 570 | 655 | 633 | 654 |

5. figure Gap between households having tap water: sewer system length per one km of tap water network (HCSO)

The quantity of treated wastewater has been growing since 2004 as well. KSH series show that the whole treated wastewater of the county is treated biologically or in sewage works with three-level cleaning process.

Where the sewerage is missing, wastewater is collected in cesspits and by sniffing trucks. Then this wastewater is made harmless in a sewage works, which are able to provide exhaustion possibilities to trucks. The quantity of truck-delivered wastewater has been showing a reducing tendency for the last one and half decades (2000: 183.000 m³, 2011: 163.000 m³). Occurrence of illegal handling and desiccation activities have been increased a lot, beside a positive trend (illegal handling appears because of the rising wastewater handling prices).

| Territorial Unit | 2000 | 2010 | 2011 | 2012 |
|-----------------------|----------------|----------------|----------------|----------------|
| Baranya | 473,1 | 173,5 | 174,3 | 146,0 |
| Somogy | 183,0 | 177,6 | 142,5 | 128,1 |
| Tolna | 114,3 | 149,3 | 132,8 | 123,9 |
| Southern Transdanubia | 770,4 | 500,4 | 449,7 | 398,0 |
| <i>National total</i> | 6 172,5 | 3 643,0 | 3 310,9 | 3 138,2 |

6. figure Waste of Settlements: Waste water of households with no connection to the sewage system [thousand cubic meter] (HCSO)

Where the sewerage is missing, wastewater is collected in cesspits and by sniffing trucks. Then this wastewater is made harmless in a sewage works, which are able to provide exhaustion possibilities to trucks. The quantity of truck-delivered wastewater has been showing a reducing tendency for the last one and half decades (2000: 183.000 m³, 2011: 163 000 m³). Occurrence of illegal handling and desiccation activities have been increased a lot, beside a positive trend (illegal handling appears because of the rising wastewater handling prices).

Solid Waste Collection and Handling

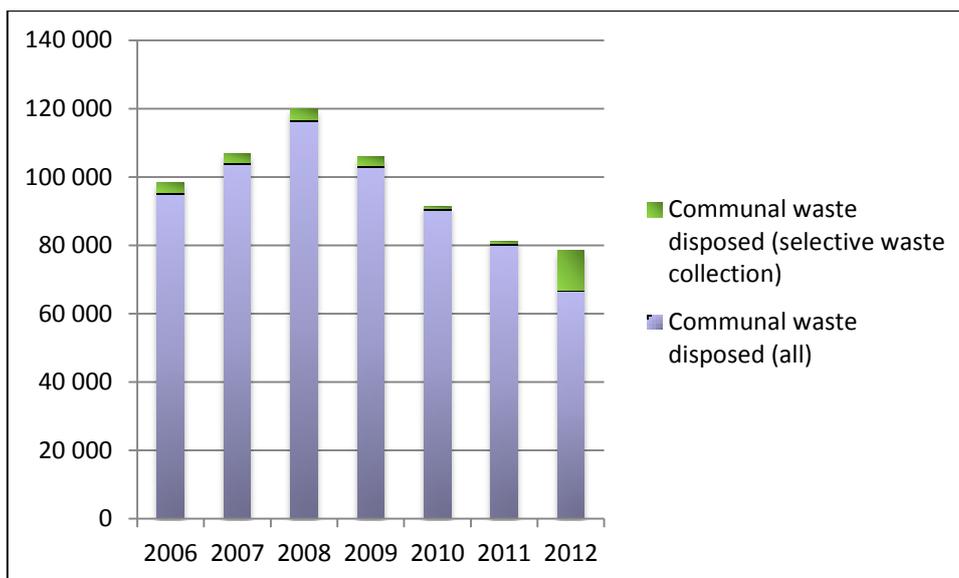
The collection of municipal solid waste is solved all around the county. Waste management systems had been created, landfills are built or they are under construction at the moment. Hazardous waste destruction is not solved on the territory of Somogy. Former landfills are planned to be recultivated. Dissemination of environmentally friendly and green thinking will result a liquidation of illegal landfills

For the collection and handling of communal waste, regional waste management associations were formed. The territory of Somogy divided between four regional waste management systems:

- Regional communal solid waste handling system of South-Balaton and Sió-valley
- Kapos-mente (Kapos region) waste-management system
- Association of local governments for the creation of Mecsek-Drava regional solid waste handling system
- ZALAISPA regional waste-management Zrt.

The city of Kaposvár and Pécs signed an agreement for the harmonisation of waste management of Kapos-mente and Mecsek-Drava waste-management systems, and for the creation of a common strategy for the future, harmonised common developments.

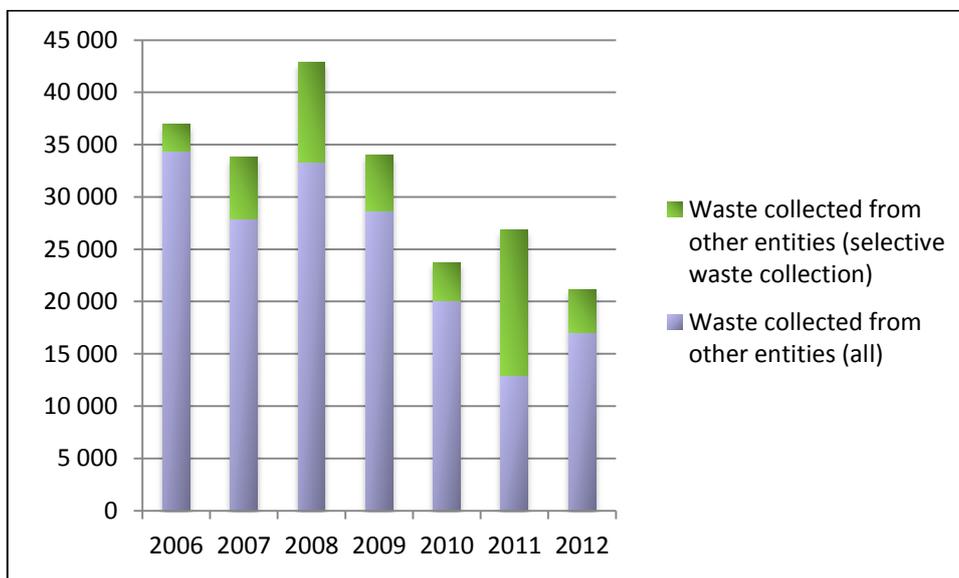
The quantity of created and transported solid municipal waste had been growing until 2008, and then it started to radically reduce. In the one hand the reason of the reduction is the spread of green thinking; in the other hand, the prices of the transportation have been raised a lot. Consequently the number of illegal landfills is probably continuously rising. But this hypothesis cannot be proved in the HCSO statistics.



7. figure Communal waste disposed by types [tons] (2006-) (HCSO)

The proportion of selectively collected waste is really low from the whole transported communal waste (in 2012 it was just 14,6%). It means that reuse and recycling have a high unexploited potential, which can be utilised in the long run if the market conditions are appropriate.

Collection of non-communal solid waste has a better picture regarding selective collection than communal waste. In 2012, 19% of the transported waste was gathered selectively.



8. figure Non-communal waste disposed by types [tons] (2006-) (HCSO)

It can be said that practically no waste is disposed by incinerating (with or without power generation) in Somogy County.

If we investigate the 'per capita' rate of the transported municipal solid waste, it can be discovered, that in the recreation zone and in towns relatively more waste is produced than in villages (official waste-transportation is preferred on these settlements and the willingness

of paying for the services is higher). On the other hand, it is statable, that in the inner peripheries of Somogy less waste is produced (per capita), thanks to the home reuse of organic waste (plants and zoogenic) and the incineration of wrappers.

Stakeholder Analysis

Governmental Institutions, Authorities

Government office for Somogy County

The following specialised departments of the county's government office are affected in the environmental protection issue: land registry, woods and forests directorate, agricultural directorate, and the plant- and soil protection directorate.

Southern Transdanubian Water Management Directorate

The whole area of Somogy is located under the operation territory of the Directorate. The Directorate's main responsibilities are the following: flood protection, water damage prevention, water supply management, hydrography and monitoring, waste water management and water supply. Under the Directorate's control, the designation of the stream-channel on the River Drava is under implementation.

The Directorate actively participates on the border-river negotiations in accordance with the 'Agreement between the governments of Croatia and Hungary on water management.'

South-Transdanubian Regional Development Agency

The Agency is responsible for the regional development programs of the EU as the immediate body of the South-Transdanubian Operative Programme. The Agency mediates 904 projects in the value of 241,7 billion HUF. The organisation is experienced in the field of local development programs, which provides further opportunities in the future. It is worth to collaborate in cross-border projects too.

National Parks

Directorate of the Duna-Drava National Park

The national park was established in 1996 from formerly protected fragments. The area of the park is 50 000 acres. The operation territory of the directorate covers the whole area of Baranya and Tolna counties; most of the territory of Somogy (except Lake Balaton's southern bank); the southern part of Fejér county and a partly the area of Bács-Kiskun county. The following Duna-Drava National Park territories are located in Somogy: riverside of Drava, juniper of Barcs, Lankóczi-forest and the area of Zákány-Órtilos. The following landscape protection areas and nature reserve belong to the Directorate: Boronka-area Landscape Protection Area, Zselic Landscape Protection Area, Basakert of Babócsa Nature Reserve, Lake Baláta Nature Reserve and Forest Reserve, Wooded pasture of Csokonyavisonta Nature Reserve, Meadow of Csombárd Nature Reserve, and Forest of Rinyaszentkirály Nature Reserve.

Balaton Uplands National Park Directorate

Smaller part of the county is controlled by the Directorate. The NP was established in 1997, its territory is 57 019 acres; it was created from 6 former landscape protection areas. Three of the NP's nature reserves can be found in Somogy County: Látrány-puszta Nature Reserve, Fehérvíz of Nagyberék Nature Reserve, Kapuvár-hegy of Somogyvár Nature Reserve.

Public Utilities

Transdanubian Regional Waterworks Corporation (DRV Zrt.)

Since 1993, DRV Zrt. has operated as a 90% state-owned corporation. In accordance with the business organisation law of 2006, DRV Zrt. became a private company limited by shares and continued its activity in its new name (DRV Zrt). The owner is the Hungarian National Asset Management Inc. Beside this major ownership portion, the employees have an 1,9% share and local governments have 1,8% shares. The remaining 6,3% is the own property of the company.

DRV Zrt. operates national and local water utilities in accordance with different agreements (asset's management-, operation-, concession agreements).

Uninterrupted water supply is provided by the company via the operation of regional, subregional and local waterworks on the territories the county of Baranya, Fejér, Somogy, Tolna, Veszprém, Zala (total number of settlements is 362).

KAVÍZ: Waterworks and sewage of Kaposvár Ltd.

The local government owned company (100%) has been operating the waterworks of Kaposvár, Juta, Zselickislak, Kaposhomok since 2009. Operation activities include water supply and sewage services; and laboratory quality assessment as well. The central sewage work has an ISO 14001/EMAS certification.

Regional communal solid waste handling system of South-Balaton and Sió-valley

The system was created by the collaboration of 204 settlements, which are situated between the southern shore of Lake Balaton and the hill-side of the Mecsek mountain. Settlements are located in Somogy-, Tolna- and Baranya counties, 77 of them situated in Somogy. It operates three, modern, environmentally friendly landfills and sorters. Two of them are located in Somogy, on the area of Som and Ordacsehi. One transshipment company is situated in Balatonkeresztúr.

Kapos-menti (Kapos region) waste-management system

The implementation of the Kapos-menti waste-management program is a great leap forward to the better handling of solid waste. The waste management of 85 settlements were solved in the county. Kaposvár has the following services: complex waste handling centre, landfills, sorting system, junkyard and composting capacity. In Nagybjom and in Hőgyész (Tolna county) junkyards are located.

Mecsek-Drava regional solid waste handling system

This complex waste management system solves the waste handling problems of 313 settlements, located in Tolna and Somogy. Two complex waste management centres are located in Marcali and four transshipment stations can be found in Barcs. Special facilities are situated in Marcali: two mechanic-biological pretreatment plants.

ZALAISPA regional waste-management Zrt.

Beside the three significant waste management systems, ZALAISPA is also an important association on the western border of the county, which is responsible of the waste transport from Iharos, Iharosberény and Pogányszentpéter. Its operation territory covers 211 settlements in the County of Zala, Vas and Somogy (just the aforementioned three).

SWOT Analysis

| Strengths | Weaknesses |
|--|---|
| <ul style="list-style-type: none"> ➔ Somogy has a high biodiversity potential. Natural heterogeneity has a real value. ➔ Outstanding wildlife territories with nationwide- and in some cases Europe wide- significance are located in Somogy County. ➔ The environmental condition of Somogy County is good, thanks to the small population density and the lack of the polluting industry. ➔ The water supply system's quality is great; the County capital can ensure its water supply from its own water basin. ➔ The tap water supply is provided almost all over the County. ➔ More than a half of the non-communal waste collected separately (2011: 51,65%). ➔ It can be said that practically no waste is disposed by incinerating (with or without power generation) in Somogy County. ➔ Waste management systems had been created, landfills are built or they are under construction at the moment. | <ul style="list-style-type: none"> ➔ The development of public utility infrastructure is needed, especially in the small villages. ➔ The occurrence of water-quality complaints is higher than the country average; it is caused by the high level of chemical component in the drinking water. ➔ The quantity of selectively collected communal waste is small. ➔ The condition of the protected buildings is not unitary, there are a lot in good condition; some of them are renovated and some of them go to rack a ruin and they cannot be saved any more. ➔ |
| Opportunities | Threats |
| <ul style="list-style-type: none"> ➔ Nature Reserves provide further tourism development opportunities. ➔ Under the surface, there are some subsurface layers, which contain cold and thermal water. ➔ There might be potential EU funding opportunities in the period of 2012-2020 for water quality improvement, development of sewerage, and for the development of the capacity of waste management. ➔ There is a real long-term potential in the reuse and recycling of communal waste, in the case of good market background. | <ul style="list-style-type: none"> ➔ It is possible to have just limited access to get funding for natural- and historical preservation and for water management. ➔ Extreme weather conditions can cause serious water management challenges (drought, inland inundation, flood) ➔ Flood and inland inundation define real environmental risks. ➔ Low probability of water quality reduction. ➔ Potential risk of industrial pollution, which can cause significant damages in the flora and fauna of the surface waters (Drava, Balaton, Kapos). ➔ It is possible that the occurrence of illegal handling and desiccation activities have been increased a lot, beside a positive trend (illegal handling appears because of the |

| | |
|--|--|
| | <p>rising wastewater handling prices). → The prices of the transportation have been raised a lot. Consequently the number of illegal landfills is probably continuously rising.</p> |
|--|--|

Identification of Key Challenges

The environmental condition of Somogy County is good, thanks to the small population density and the lack of the polluting industry. In accordance with Somogy County's Spatial Plan, it can be declared, that the already existing tendencies and natural processes will not change significantly. The expected growth of forests will improve the air-quality and it will help to protect the climate. The planned motorways will not worsen the conditions. The planned railway developments will be beneficial and will have a significant environmental protection aspect.

Inspecting the field of historic preservation, the condition of the **protected buildings** are not unitary, there are a lot in good condition; some of them are renovated and some of them go to rack a ruin and they cannot be saved any more. Small settlements lack funds to protect and renovate the historic memories, which in fact projects that either the matter requires outside funding from different sources or let the historic values to decay. Examples for the later can already be seen.

The **infrastructure of public utilities needs to be developed**, especially the supplied water's quality in small villages and the wastewater management. It is necessary to improve the quality of drinking water too.

Due to the aforementioned processes flood and inland inundation define real environmental risks in the field of water management. The **extreme weather conditions can cause serious water management challenges** (drought, inland inundation, flood).

The **proportion of selectively collected waste is really low from the whole transported communal waste** (in 2012 it was just 14,6%). It means that reuse and recycling have a high unexploited potential, which can be utilised in the long run if the market conditions are appropriate. The rate didn't really increased in the last years, which requires the attention of the county legislations and authorities as without recycling the amount of disposed waste is raising more quicker which is not how a sustainable waste management works.

It is possible that the occurrence of illegal handling and desiccation activities have been increased a lot, beside a positive trend (illegal handling appears because of the rising waste handling prices). Some of these waste presumably appears on illegal dumps. **A települések közmű-infrastruktúráinak korszerűsítése szükséges.**

1. **The infrastructure of public utilities needs to be developed**
2. **It is necessary to improve the quality of drinking water.**
3. **The proportion of selectively collected waste is really low from the whole transported communal waste, and it needs to be addressed.**
4. **In case of the majority of settlements the lack of waste water handling system is also needs to be addressed.**

5. **On the field of water management actions need to be taken in order to be prepared for extreme weather conditions, like draught and floods.**
6. **Some of the protected heritage – mostly buildings – needs to be renovated due to their poor conditions.**

Cross-sectoral linkage

Agriculture

As a basic but important common field, forestry, agriculture and the environmental sectors are very well connected. The forestry of Somogy are the key to the professional handling and augmentation of the high biodiversity forests.

Soil conditions are excellent for the forests in the county. The forest area likely will increase in the near future. Damaged areas (post quarrying and waste dump areas) are planned to be rehabilitated thus more favourable conditions are expected regarding the amount of forests. With proper usage of agro technical tools the effect of water and wind erosion can be mitigated.

The County has more afforestation options due to the structural change in agriculture.

Wildlife management also has a high economic potential in Somogy. The genetic properties of the deer population are recognized throughout the world. Research on red deer domestication has resulted in a new, environmentally friendly way of livestock herding. It is essential to make wildlife management's multiple utilization (tourism, unique products, level of processing) more organized.

Regional Development

The environmental protection and regional development, urban infrastructure, mainly related through the area of utilities. Improvement of the utility infrastructure is needed in settlements; the development of the quality of drinking water is a need and in most of the villages it is needed to solve the missing wastewater treatment problem.

Transport and tourism

Motorway M7 has an important international role and it is a significant element of the Hungarian public road system: it supports the quick availability of Lake Balaton and beside this fact it helps to reduce the traffic in the settlements situated on the lake's bank; the environmental quality the summer resorts is protected. The motorway's junctions are allocated well, so the good availability of the 50 km long holiday resort zone is ensured. There are a good opportunity of the further development of the so called 'background territories' (the inner part of Somogy).

River transportation is possible on River Drava for barges (400-600 tonne) from the firth to Barcs, or in some cases till Bélavár, but the trade shipping is very rare on the Hungarian side. Somogy has not got a border port. Inland public port is located in Barcs and a cruise port as well. There is a port in Drávatamási too. The river has a great potential in river trips and water-related tourism.

Energy Sector

Geothermal and river-related energy production is significant. The preservation of groundwater is a national priority, it is kept in mind in Somogy as well, while the geothermal energy used for heating or electricity production. Reinjection has to be done circumspectly in favour of the protection of thermal water. The energy production usage of River Drava and Kapos is criticisable in respect of natural conservation, because hydroelectric stations change the river bed's depth and the flora and fauna of its environment. Building of hydroelectric stations is not an option yet, but if it comes true, natural preservation costs will had to be count.

Planting power plants is also a sensitive topic, which has to be handled carefully for the sake of the already existed natural forests.

It is also important, that the barren measures are able to be carbon-dioxide storage. This has environmental importance. The estimated storage capacity of Hungary is 550 Mt (quarries on the last stage are counted), from this amount, the estimated carbon-dioxide able storage capacity is 100 Mt. 3,4 Mt of storage capacity is located in Somogy, nest to Babócsa (mining field IV). The country's deep storage capacity is higher, it is up to 1756 Mt; from it the actually useful part is 761 Mt (the groundwater and geothermal storages are not counted). Somogy has 72,8 Mt capacity of deep storage on the Drávavölgy meadow.

List of publications used:

KSH Statisztikai tájékoztató – Somogy megye, 2013/4 (HCSO, 2014)

Somogy Megye Területfejlesztési Konceptiója (Somogy Megyei Önkormányzat, 2014)

Somogy Megye Területrendezési Terve (Somogy Megyei Közgyűlés 15/2004. (XII. 27.) önkormányzati rendelete)

Join Cross-border Enterprise Development Strategy for Somogy and Virovitica-Podravina Counties 2013-2020 (SOVISEC Project, 2012)

TEIR Országos Területfejlesztési és Területrendezési Információs Rendszer adatbázisa (www.teir.hu)