

The Optimal Territorial Ambit Authority Lagoon of Venice

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Environmental Declaration 2007-2009 (abstract)

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1. FOREWORD

The Environmental Declaration of the Optimal Territorial Ambit Authority (AATO) Lagoon of Venice, represents the closing of a set of activities, started in 2006, which has carried out the introduction of an environmental management system that aims at improving the environmental performances of the actions undertaken, and the presentation to the public and to other subjects interested in getting more information about this issue. The development of a course for the EMAS registration of a complex organization, such as the AATO Lagoon of Venice, definitely represents a novelty in the Italian context.

The spur to achieve the EMAS registration originates both from the awareness that the AATO Lagoon of Venice represents the body that manages the Integrated Water Service within a territory which includes 25 Municipalities of the Provinces of Venice and Treviso, and from the requests of the citizens that arose during the AGENDA 21 process.

In connection with these considerations, the goals and the aims of the EMAS registration in the AATO's specific case, are quite different to those strictly connected to the economic-managing factors. The EMAS registration is, for the AATO, an opportunity for a more effective management of the water resource, assuring the active involvement of the citizens and reducing the environmental impacts.

Therefore, it is not a matter of evaluating an organization or a production process from the environmental point of view, but promoting the dialogue and the cooperation with the Water Service Companies of the Integrated Water Service and the water cycle in general, in order to carry out an environmentally-friendly and effective management of the water resource. From the fully awareness of all this, the spur and the will of the AATO Lagoon of Venice to achieve the EMAS registration originated.

The present document represents an abstract of the Environmental Declaration of the AATO "Lagoon of Venice", drawn up according to the EMAS regulation n. 76/2001.

This is a simplified version able to tell the users about the more significant environmental aspects linked to the water resource.

In this way, the Optimal Territorial Ambit Authority (AATO) Lagoon of Venice wants to communicate all the information included in the Environmental Declaration extracting the most important contents that can involve not just the stakeholders but all categories of users.

Eng. Tullio Cambuzzi
General Manager of the AATO Lagoon of Venice

Ezio Da Villa
Delegated Chairman of the AATO Lagoon of Venice's Institutional Committee

Venice - Mestre, 26th November 2006

THE ENVIRONMENTAL POLICY OF THE AATO Lagoon of Venice

2. THE ENVIRONMENTAL POLICY OF THE AATO Lagoon of Venice

The AATO Lagoon of Venice, established on the 29th July 1998 in the form of an Agreement between Local Bodies as foreseen by the Regional Law 5/98, plans and controls according to “Galli Law”, the Integrated Water System (I.W.S.) of a catchment basin including 25 municipalities (also Venice) within two Provinces of Veneto Region: Venice and Treviso.

The AATO Lagoon of Venice has identified in the EMAS registration the suitable tool to optimize the environmental management both of its own activities and of those related to the territory under the AATO’s jurisdiction, pursuing the following goals:

- promoting the rational use of the water resource respecting the principles of solidarity, of safeguard of the next generations’ expectations and rights, of renewal and saving of the resources, considering priority, as regards the others, the use of water for human consumption;
- correctly managing groundwaters, in terms of quality and quantity, as well as the well’s safety;
- reducing the environmental impacts due to situations of hydric, hydraulic and hygienic-sanitary emergency;
- reducing to the minimum the consumptions of raw materials and energy in the offices;
- creating a debate and a dialogue with the citizens.

The Environmental Management System represents the answer to the principal needs of the AATO Lagoon of Venice, as it is the thread to control, in a well coordinated way, all the activities and processes that affect, directly or indirectly, the environment. Moreover, the EMAS registration represents a way to strengthen the role of the Organization and to guarantee an effective management of the resource and the Integrated Water Systems to all the citizens.

In addition to the respect of the Environmental Regulations, the Environmental Management System allows to prevent and to control all the environmental impacts due to the AATO Lagoon of Venice’s activities, also through the training and the involvement of the Water Service Companies of the Integrated Water System.

In order to achieve the environmental improvement’s goals, a programme of interventions has been carried out, related the following issues:

- implementation of an Environmental Management System following the EC Regulation 761/01;
- characterization and correct management of the environmental aspects that could generate significant impacts on the environment, connected to the AATO’s own activities as well as those on which AATO can have an influence
- commitment towards a constant improvement of its own environmental performances using and monitoring proper indicators of performance;
- commitment to respect the environmental regulation currently in force as well as any other undersigned requirement;

- prevention and management of potential environmental or pollution emergencies;
- involvement and sensitization of its own personnel, also through the spreading of the present environmental policy's contents, in order to disseminate a culture of responsibility towards the environment;
- guidance of its policy and administrative choices towards environmental protection criteria;
- promotion of a sustainable use of the water resource;
- promotion of management and environmental certification programmes among the Water Service Companies and promotion of a dialogue with them, in order to sensitize about the environmental issues and the correct management of the water resource; for this aim, the following actions must be undertaken together with the Water Service Companies:
 - o development of actions aiming at increasing the number of citizens connected to the sewage system in order to guarantee the correct depuration of the sewages;
 - o leakages' investigation and substitution of the old pipelines;
 - o protection and monitoring of the water bodies which bring water for human use into the Lagoon of Venice or into other surface bodies;
 - o land protection, beforehand evaluation (i.e. through screening or Environmental Impact Studies) of the impact and compatibility of the construction projects, extension of the networks and of the depuration and purifying plants;
- promotion of projects for improving the geologic hydrogeologic knowledge of the territory under the jurisdiction of the AATO Lagoon of Venice;
- intensification of the cooperation with Organizations, Public Bodies and Associations.

The awareness and the responsibility of everybody about the needs of working respecting the environmental guidance established by the AATO Lagoon of Venice, will allow to reach the fixed goals.

Venice Mestre, 26th September 2006

Tullio Cambruzzi

General Manager of the AATO Lagoon of Venice

Approval with the Resolution of the Institutional Committee nr. 686/13 of the 5th June 2007

2. THE AATO LAGOON OF VENICE

The Optimal Territorial Ambit (ATO) is the territory on which the Integrated Water Service must be organized, while the Optimal Territorial Ambit Authority (AATO) is the body made up by the 25 Municipalities included in the ATO (Campagna Lupia, Campolongo Maggiore, Camponogara, Chioggia, Dolo, Fiesso, Fossò, Martellago, Mira, Mirano, Noale, Pianiga, Salzano, S. Maria di Sala, Scorzè, Spinea, Stra, Venezia, Cavallino Treporti, Vigonovo, Mogliano Veneto, Morgano, Preganziol, Quinto di Treviso, Zero Branco), which must manage the reorganization process of the Water Services, following the provisions of the regulation in force related to the water resource's management.

The AATO, like every other Public Body, has in practical a double side, one external and one internal:

- in one hand it is a body which, for what concerns the Integrated Water Service, manages the territory through accurate and proper tools that are given by the regulations (Water Master Plan and Agreement);
- on the other hand it is also a “real” organization made up by persons and structures (offices and buildings) which uses materials (resources) and immaterial (services and advices) goods to perform its own activities.

The reorganization process of the Water Services aims at getting over the previous fragmentation of the existing managements. The aqueduct, sewage and purification services must be managed in an integrated way and with technical-economic and quality criteria adequate to the citizens' needs. The Ambit Authority has the task of controlling and planning the activities of the Water Service Companies.

The tasks of the AATO also include:

- the analysis and the recognition of the aqueduct system and the other components of the integrated water cycle (water plug points, sewage, depuration);
- the adoption of the Water Master Plan, a planning tool which defines the standards of the service's quality, the investments needed and the tariffs;
- the technical-administrative control activity for the respect of the Agreement;
- the entrustment of the water services' management within the Optimal Ambit, ruled by the contents of the Agreement and the Water Master Plan.

Relation between the AATO and the Water Service Companies

There is a clear-cut division between the role of the AATO, which defines the goals and controls the carrying out of the Water Master Plan, and the Water Service Company which organizes the service and accomplishes the goals included in the Plan.

Therefore, the AATO performs its activity verifying the achievement of the targets of the Water Master Plan and applying the tariff of the water consumption.

A management Agreement rules these relations between the Ambit

Authority and the Water Service Company.

The Agreement is set up basing on the Water Master Plan which, fixing the management goals, becomes a real “strategic plan”.

Figure 1

The AATO Lagoon of Venice within the territory

Territorial organization of the AATO Lagoon of Venice

Italy

Veneto Region

AATO Lagoon of Venice

It is an essential document which guides all the decision-making activity of the Ambit Authority in the organization of the Integrated Water service, drawn up following the Galli Law (as modified by the Legislative Decree 152/2006). Through these document, the Authority acquires and defines all the elements needed to rule the relation with the Water Service Company.

From the users' point of view, the Water Master Plan is important because it sets up the economic-financial plan and it defines the water tariff.

Through the definition of all the investments foreseen and the related expenses charged to the Water Service Company and once defined the way to achieve all the goals of the Water Master Plan, the new management cost and its distribution is fixed for all the duration of the Agreement. Therefore, the real average tariff of the planned management is fixed as well.

The Water Master Plan must then foresee:

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- the verification of the plants and services' conditions;
- the new services' standards and the investments needed to fulfil them;
- the programme of time to carry out the investments;
- the tariff.

The Agreement

The Agreement is defined basing on the Water Master Plan, which fixes the management goals and which is the planning and management control tool in the middle-long period.

The Agreement is then the service contract between the Ambit Authority and the Water Service Company.

It fixes the goals and the duties of the management and it defines the evaluation and intervention's methods of the Ambit Authority, in order to assure the fulfilment of the targets foreseen.

The Agreement establishes:

- the management's criteria of the Integrated Water Service (minimum levels of the water services, features of the service);
- duties and responsibilities of the Water Service Company (product's quality levels, economic account and financial standing, quality's controls, guarantees);
- the duties and the control's powers of the Ambit Authority (examination and control of the respect of the services' levels and managerial data, examination of the operative's costs and the applied tariffs, periodic control of the foreseen target's fulfilment, periodic determination and update of the tariffs);
- the users' rights (definition of the safety and quality standards, information, participation and relations with the customers, continuity of the service).

Figure 2.

Relations between the AATO and the other interested parts

4. THE ACTIVITY OF THE WATER SERVICE COMPANIES

The Ambit Authority entrusted the Integrated Water Service's management to four Companies for a temporary period, stipulating a service agreement which commits them to guarantee adequate qualitative standards to the users, independently from their residence and from their economic power.

The Water Service Companies which work within the territory are:

- ASP Chioggia S.p.A.,
- VESTA S.p.A.,
- ACM S.p.A.,
- SPIM S.p.A..

Up to now, the Water Service Companies are starting the procedure to unify the Integrated Water Service's management into a sole company.

The Municipalities managed by each Company are shown in the table below, together with the total population data referred to the year 2005 belonged to each body of users.

Table 1
Municipalities entrusted to each Water Service Company and related population supplied

| Water Service Company | Number of Municipalities | Entrusted Municipality | Resident population until 2005 | Percentage in comparison with the total resident population |
|-----------------------|--------------------------|--|--------------------------------|---|
| VESTA | 2 | Venice and Cavallino-Treporti | 283611 | 44% |
| ACM | 17 | Campagna Lupia, Camponogara, Dolo, Fiesso, Fossò, Martellago, Mira, Mirano, Noale, Pianiga, Salzano, S. Maria di Sala, Scorzè, Spinea, Stra, Venezia, Vigonovo | 249902 | 38% |
| ASP | 1 | Chioggia | 51336 | 8% |
| SPIM | 5 | Morgano, Mogliano Veneto, Preganziol, Quinto di Treviso, Zero Branco | 65702 | 10% |
| TOTAL | 25 | | 650551 | 100% |

The Water Service Companies within the AATO's territory

The territory of the AATO in Veneto Region

Water Service Companies

ACM

ASP

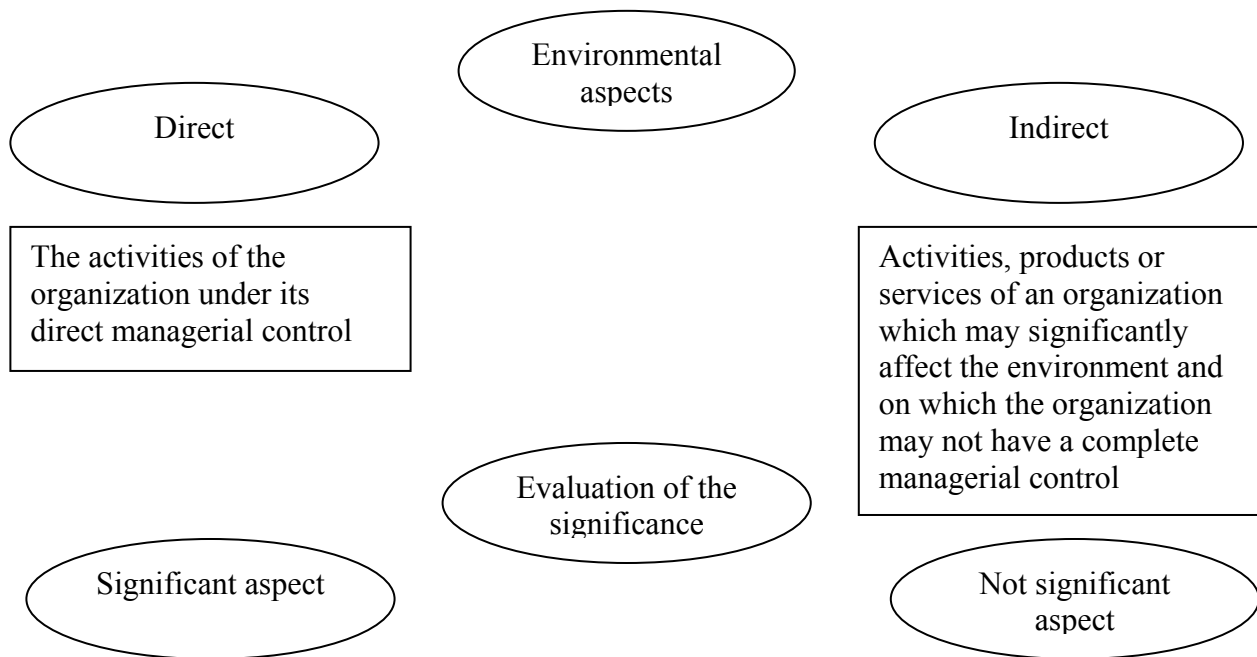
SPIM

VESTA

5. SIGNIFICANT ENVIRONMENTAL ASPECTS

Figure 4

Direct and indirect environmental aspects



The significant direct and indirect environmental aspects are listed in succession (in blue the activities which are directly belongs to the AATO, in green the indirect activities of the AATO)

Table 2
Significant environmental aspects of the AATO

| ACTIVITIES | SIGNIFICANT ENVIRONMENTAL ASPECT |
|---|--|
| Territorial planning | Water consumptions |
| | Alteration of the physical features (hydrography, hydrology, hydraulic) |
| | Water discharges (surface and ground water) |
| Supplying (lifting and purifying plants) | Water consumptions |
| | Alteration of the physical features (hydrography, hydrology, hydraulic) |
| Distribution (water meters, adduction, picking up, store, network) | Hydrographic, hydrologic and hydraulic alteration (pipes' leakages under emergency, sewage's leaks from the filling channels in case of floods during rain events) |
| System (sewage, filling channels, lifting plants) | Soil, surface and ground water pollution (in case they're not connected to the system) |
| | Soil and ground water (in case of emergency) |
| Depuration (lifting stations, mechanic/biologic/tertiary treatment vats, depuration muds) | Water discharges (surface water) |
| | Wastes' production (mud and inert materials) |

The direct environmental aspects are listed in blue and the indirect ones in green

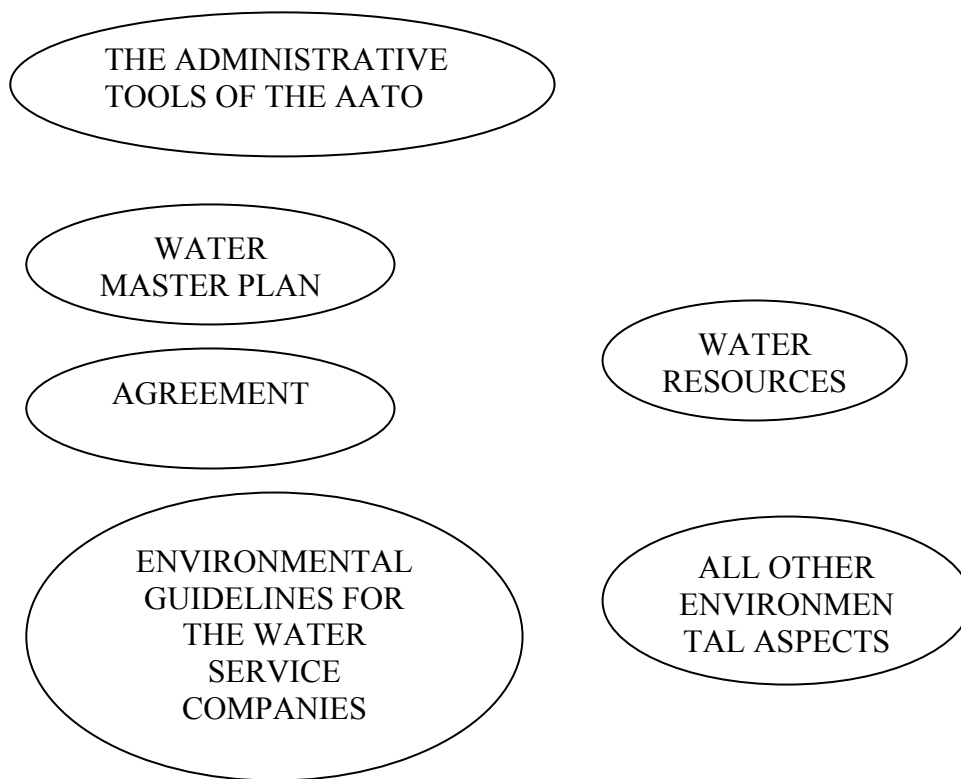
Both the direct and the indirect aspects of the AATO affect the quality of the environmental units. A key element is related to the management of the indirect environmental aspects, that is the aspects that may be affected by political and strategic decisions adopted by the AATO Lagoon of Venice.

For this aim, the AATO Venice Lagoon must realize a policy to control and monitor the indirect environmental aspects as well as the effectiveness of the undertaken actions, in order to avoid, to prevent and to mitigate the environmental effects caused by the different measures adopted by the Body itself.

It is clear that the administrative tools available to the AATO Lagoon of Venice for monitoring the indirect environmental aspects (linked to the activities of the Water Service Companies of the Integrated Water Service) are, first of all, the Water Master Plan and the Agreement for what concerns the water resources, while all the other impacts (soil, atmosphere, dangerous substances, fire preventions, lands, etc.) are managed through the signature of Guidelines by the Water Service Companies.

Figure 5

Administrative tools of the AATO Lagoon of Venice to monitor the indirect environmental aspects
Nella figura:



In particular, the Water Master Plan, through the specific goals included in it (reduction of the adduction-store-supply losses, reduction of the final consumptions, reuse of the refluent waters, reduction of the polluting loads, environmental education on the water's value and use, prevention, protection and safety of the springs' vulnerability, drinking water's plants and supply system) affects the water resource's quality and quantity. As a matter of fact, in order to achieve each goal

some resources and activities were decided.

The AATO Lagoon of Venice controls the service and the activity of the Water Service Companies in order to verify the achievement of the goals and the quality levels fixed by the Plan; it controls the economic and the financial trend and it defines the whole of the activities needed to verify the proper and correct carrying out of the Plan; it assures the exact application of the tariffs.

The signature of the agreement allows to organize and to manage the aqueduct, the sewage and the depuration services through an integrated water cycle realized on a large scale, which does not regard just a single Municipality or a single Consortium, in which the efficiency, effectiveness and cheapness criteria must be widely put into operation. The interventions must be planned, always following the general goals of the AATO Lagoon of Venice.

With this tool, the AATO Lagoon of Venice performs its own duties of coordination and controls on all the services supplied, on the quality levels, on the investments, on the tariffs.

All the other environmental aspects, different from the ones related to the quality and the quantity of the water resources, cannot be monitored by the Water Master Plan and/or by the Agreement. For this purpose, within the implementation of the Environmental Management System, the Environmental Guidelines have been drawn, in order to assure that the activities carried out by the Water Service Companies, which may have potential significant impacts on the environment, will be realized respecting the current set of rules. In particular the Environmental Guidelines foreseen the respect of inflexible regulations related to the following environmental aspects:

- emissions in atmosphere (punctual, diffuse, dusts)
- wastes production
- noise emissions
- odour emissions
- electromagnetic emissions
- energetic consumptions
- dangerous substances management
- fire-prevention management (fire prevention certificate, plants, protection)

5.1. Water resources

5.1.1. Water quality conditions

The Lagoon of Venice

The Ministerial Decree of the 23rd April 1998 (Ronchi-Costa) of the Minister of the Environment, which acted in concert with the Minister of Public Works, contains “Water quality requirements and technical features for the depuration plants in order to protect Venice Lagoon” and fixes the limits related to the quality’s goals to be carried out in the lagoon and in the water bodies of its draining river basin, for assuring the safeguard of the aquatic life and the fishing activities, the production of shellfish and bathing. The monitoring of the water in Venice lagoon is made by ARPAV.

The starting up, in 2001, of the plan for monitoring the quality and quantity of the water bodies in the draining river basin has allowed to know with an increasing precision, the real loads discharged in lagoon. An important contribution for the hydrogeological monitoring in the rivers’ mouths has been given by the samplings of the Venice Water Authority and of the Consorzio Venezia Nuova.

From the monitoring plans carried out in the triennium 2001-2003, the nitrogen load still results rather elevated and the phosphorus load is higher than the limits foreseen by the Regional Plan (Piano Direttore) and by the Ministerial Decree 23/04/1998. The Ronchi-Costa Decree fixes a maximum allowable load to be discharged in the Lagoon of Venice of 3000 tons/year for the nitrogen and 300 tons/year for the phosphorus. In the Lagoon of Venice, the average annual nitrogen load, excluding the atmospheric and the Venice’s downtown contributions, is about 4900 tons. This datum may give an idea of the average situation, as in that triennium one year had normal rain events, one was exceptionally rainy and one was very dry. Moreover, in the 2002 (rainy year) many monitoring campaigns were carried out in order to improve the estimation of the loads flowed into the lagoon with the floods. Instead, the average phosphorus’ loads are a little higher than 300 tons.

Surface waters

In the AATO’s territory, a surface water monitoring network is active, mainly managed by ARPAV, which includes measures’ stations of the chemical and chemical-physical parameters and sampling stations of the EBI (Extended Biotic Index).

The outcomes of the biomonitoring campaigns for the EBI measurement (indicator of the water quality’s effect) carried out in the last 2 years, confirmed a situation of general deterioration. In fact, in 2002, in 36 studied sites, only in 6 cases the class EBI II was reached, corresponding

to a river in a “good” status, while 11 sites showed EBI index values typical of polluted and highly polluted environments. This happens in particular in the middle-south areas of the draining river basin, in the final zone of the Marzenego, Zero, Ruviego and Naviglio Brenta basins.

The survey of the watercourses’ qualitative features within the AATO’s territory used for drinking purposes (Adige and Sile rivers) allows to define the typical use of a river. For what concerns the Adige river, the qualitative data carried out in the period 1997-2001 shows values in accordance with the A3 class and therefore the drinkableness of the watercourse. The data for the period 2001-2002 show a poor environmental status due to the low value of EBI.

The monitoring stations in the Sile river studied by ARPAV are located in correspondence of the derivation between the Fossa d’Argine canal (in the Municipality of Quarto d’Altino) and the south part of the Sile-Musestre confluence (in the Municipality of Roncade)

For what concerns the drinking uses, the qualitative data carried out in the period 1997-2001 show:

- for the first station the accordance with the A3 class in the years 1997, 1998 and 2002; the non accordance between the years 1999-2001;

- for the second station the accordance with the A3 class in the years 1998 and the non accordance for the year 1997 and the period 1999-2001.

From more recent data, the environmental status of the Sile upriver and downriver of Treviso, results enough good (the LIM class ranges between 2 and 3). During the last monitoring campaign in the 2005, the Sile river showed a condition generally sufficient (the monitoring stations are located in Quarto d'Altino).

Groundwaters

The AATO's territory is characterized by important groundwater resources both in terms of quantity and quality. Nevertheless, these resources are not uniformly distributed in the territory. An area, defined as "drinking water resource" area, corresponds to the five Municipalities within the Province of Treviso, the Municipalities of Scorzè, a limited extension of the ones of Noale, Martellago and Salzano; in this area, the groundwater's quality and quantity permitted the settlement of the wells which pump the most of the water supplied by the ATO's aqueducts, as well as the development of many economic activities linked with the water's use, i.e. the extraction and the bottling of mineral water.

The "drinking water resource" area is characterized, on the hydrological point of view, by:

- the existence of aquifers laid one upon the other;
- considerable transmissibility of the aquifers which give high capacity to the wells;
- elevated piezometry with values near or higher to the local plain level (with limited or without extraction costs)
- high capacities which allow considerable exploitation with limited lowering of the ground water level
- low subsidence risk related to the local geological structure;
- good water quality and absence of contaminations and, therefore, no need of purifying treatments;
- high topographical height of the aqueduct extraction points comparing to the users' areas (this fact permits the gravity transport of water from the wells to the adduction network reducing the costs).

The aqueduct wells of the AATO are located in the Municipalities of Morgano, Quinto di Treviso, Zero Branco, Scorzè, Preganziol, Trebaseleghe and Treviso (the last two are not inside the AATO's borders) and the whole AATO's territory is characterized by the presence of thousands private wells used for different purposes ranging from drinking, bottling, domestic and industrial.

The wells are mostly without pump, as the extraction is done using the artesianity of the area.

Nowadays, it is still widespread the habit to leave the artesian wells completely open. This generates high levels (some cube metres/second) of water wasted. For this and other causes the pressure of the stratum is continuously decreasing, so much that in many areas the more superficial ones have lost their artesianity. The stratum deeper than 200 metres still keep a prevalence on the plain level between 1 and 10 metres but, if the current waste will continue, they will decrease their pressure as well.

In practice, in the last 20 years a progressive and heavy impoverishment of the stratum, of an optimum quality, located in the first 100-2000 metres of depth that has caused the exploitation of the geological resources in the deeper levels (in particular at 270-300 metres of depth). This phenomenon, which has not been faced, is particularly evident in the outcomes of the studies carried out by the Province of Venice. It has been shown how, in the provincial area, there are aqueducts which pick up water from these aquifers that are able to supply drinking water for hundreds thousands of people; there are many important and valuable agricultural activities, i.e. the chicory in Scorzè and the horticulture in Cavallino-Treporti which have developed because of the

presence of this resource; there are thousands of private wells that extract this water for different purposes. Also, it has been shown the progressive impoverishment of the groundwater's level.

For what concerns the groundwater's quality, the data for the SCAS (Chemical Status of Groundwater) parameter has been collected. This is the chemical status represented by 5 critical classes and it is defined basing on 7 basis chemical parameters (electric conductivity, chlorides, manganese, iron, nitrates, sulphates, ammonium ion) and 33 chemical inorganic and additional organic parameters.

The outcomes of the monitoring campaigns carried out during the year

2005, show that the main critic state regards the sampling point located in Quinto di Treviso, which needs particular attention as in this area there are wells used by the aqueduct. The quality of the groundwater resources of the Treviso' Province is not generally good, and it is mainly compromised in the West part of the province where the human impact is rather heavy and the hydrochemical quality is, in some cases, poor. However, all springs' waters used for drinking purposes respect the limits fixed by the law. The main factors which cause this condition, are the agricultural impact in the upper, middle and lower plain areas, due to the use and the loss in the soil of high quantities of plant protection products and chemical fertilizers, which are able to filter through the earth reaching the stratum. The nitrates concentrations show a progressive increase in all area. Also the herbicide and its derivatives pollution affects the stratum rather diffuse, with concentrations that are actually increasing.

Moreover, in this territory there are many punctual pressures caused by the homogeneous distribution of the productive activities:

- the sectors which generate the greatest amount of special dangerous wastes, able to damage the groundwater resource and not only that one, are the manufacturing ones (textile, food, chemical, sanitary, building, wastes disposal...);
- the main problems caused by the industrial sector to the groundwater resource are not so much related to the water extraction (that is almost insignificant in the hydrological balance), but the quality of the discharged waters, that may be result polluted.

As a matter of fact, the organic chlorinated compounds, even if are linked to punctual pollution events (i.e. dumpings), cause a diffuse and persistent contamination of groundwaters. Also, some dumpings located in the Province of Treviso, that is within the AATO's territory or in its neighbourhoods, have problems of percolate or polluted substances seepage in the underground, with a consequent pollution in the stratum below. For these dumpings, located in an area (the strip between the high and the middle plain) extremely vulnerable and exploited for drinking water, must be foreseen some effective measures to control the loss of the polluting substances. The zones more affected by this risk are the ones included in the Municipalities of Morgano, Quinto di Treviso, Preganziol; the stratum, monitored by the ARPAV's wells, is already polluted .

In the Province of Venice, groundwaters show a minimal critical state, except for the areas of Martellago, Noale, Scorzè, Spinea e Zero Branco in which the value of the SCAS is two (however, a sufficient value).

5.1.2. Direct environmental aspects

Water supplying

The AATO's offices uses water from an aqueduct whose consumptions are monitored basing on the invoices sent by Vesta and on the monthly meter readings.

The quantity's trends of water used in the period 2005-2006 and in the first semester of the 2007, is reported below:

Figure 6

Water volumes extracted by the aqueduct (absolute values in cubic metres) cubic metres
(* the whole datum is estimated basing on the data referred to the 1st September

Just the water amount extracted by the aqueduct since the year 2005 has been evaluated, as the available data for the second semester of 2004 (exactly from August to December) are not significant; in fact, though the AATO purchased the new offices in the 2004, people enter into it only after January 2005.

The indexation of the water consumptions for each employee is a rather difficult task, because of the personnel's variability in the biennium 2005-2006, therefore, the indicator would result as not significant. Nevertheless, the water consumption from the aqueduct is comparatively low significant.

Water discharges

The AATO's building is connected to the public sewage, which collects only the domestic reflux waters.

5.1.3. Indirect environmental aspects

For monitoring these aspects within the AATO's territory, some information, concerning the adduction, supplying, sewage and depuration works, has begun to be collected, through the recognition carried out according the chapter 11, paragraph 3 of the law 36/94.

After the recognition phase, the information related to the activities of the Integrated Water Service have been annually collected by the AATO for the drawing up of the data collection form requested by the Committee for the Supervision on the Use of the Water Resources (COVIRI). The AATO

collects the data coming from each Water Service Company and gathers them on a territorial scale corresponding the whole AATO's area. The table with the data requested by the COVIRI for the year 2005 are reported below.

Table 3
Data of the Aqueduct Service referred to the Water Service Companies – Year 2005

| AQUEDUCT SERVICE | Unit of measurement | ACM | ASP | SPIM | VESTA |
|--|---------------------|------------|-----------|-----------|------------|
| Citizens supplied by the aqueduct | n. | 252.580 | 51.024 | 43.000 | 282.334 |
| Total citizens (fluctuating + resident) | n. | 252.580 | 60.716 | 66.503 | 303.349 |
| Average daily supplying per head on annual base (*) | l/cit/d | 173 | 139 | 351 | 409 |
| Average daily supplying per head for the trimester July-September (*) | l/cit/d | 192 | 228 | 354 | 445 |
| Total picked up volume | m ³ | 32.493.768 | 7.000.000 | 5.503.424 | 61.714.906 |
| Volume purchased by third parties | m ³ | 91.633 | 546.315 | 0 | 1.419.821 |
| Adduction networks | Km | 209,48 | 28 | 8,42 | 105,4 |
| Supplying network | Km | 1.668,6 | 285 | 272,91 | 1.219,90 |
| Volume picked up from the wells | m ³ | 32.493.768 | 0 | 5.503.424 | 54.183.467 |
| Volume picked up by the springs | m ³ | 0 | 0 | 0 | 0 |
| Volume picked up by surface waters | m ³ | 0 | 7.000.000 | 0 | 7.531.439 |
| Number of users altogether affected, during the year, by non planned interruptions in the supplying and/or by pressure's reductions longer than 12 hours | n. | 0 | 0 | 0 | 0 |
| Total invoiced volume | m ³ | 20.865.831 | 5.514.483 | 3.324.777 | 42.120.420 |
| Volume supplied and invoiced to the users without water meter | m ³ | 0 | 0 | 0 | 0 |

* Daily supplying per head non comparable each other as they've been calculated with a different method by the Water Service Companies.

Table 4
Sewage service's data referred to the Water Service Companies – Year 2005

| SEWAGE SERVICE | Unit of measurement | ACM | ASP | SPIM | VESTA |
|---|---------------------|--------|-------|-------|--------|
| Total residential equivalent units (supplied + to be connected to the | n. | 210999 | 50300 | 51200 | 418573 |

| | | | | | |
|--|----|---------|--------|--------|--------|
| sewage) | | | | | |
| Residential equivalent units supplied by separated sewage network | n. | 133.583 | 11.800 | 32.024 | 34.763 |
| Residential equivalent units supplied by mixed network | n. | 39.732 | 36.400 | 976 | 312867 |
| Residential equivalent units from sewage without depuration plants | n. | 37.704 | 0 | 0 | - |

Table 5

Depuration service's data referred to the Water Service Companies – Year 2005

| DEPURATION SERVICE | Unit of measurement | ACM | ASP | SPIM | VESTA |
|---|---------------------|-----|---------|--------|---------|
| Residential equivalent units supplied by depuration plants | n. | - | 48.200 | 15.000 | 548.165 |
| Number of total plants | n. | - | 2.100 | 18.200 | 70.943 |
| Residential equivalent units that need depuration plants | n. | - | 1 | 4 | 4 |
| Total plants capacity | n. res. eq. units | - | 160.000 | 25.000 | 70.943 |
| Distribution of depuration plants number and of supplied population listed per capacity classes | | | | | |
| ≤ 2.000 | n. | - | 0 | 1 | 0 |
| | res. eq. units | - | 0 | 1.400 | 0 |
| 2000 < REU ≤ 10.000 | n. | - | 0 | 3 | 0 |
| | res. eq. units | - | 0 | 13.600 | 0 |
| 10.000 < REU ≤ 100.000 | n. | - | 0 | 0 | 1 |
| | res. eq. units | - | 0 | 0 | 9.954 |
| > 100.000 REU | n. | - | 1 | 0 | 3 |
| | res. eq. units | - | 48.200 | 0 | 538.211 |
| Treatments' typology: distribution of depuration plants number and of supplied population listed per typology | | | | | |
| Primary treatment | n. | - | 0 | 0 | 0 |
| | res. eq. units | - | 0 | 0 | 0 |
| Secondary treatment | n. | - | 0 | 3 | 0 |
| | res. eq. units | - | 0 | 15.000 | 0 |
| Tertiary treatment | n. | - | 1 | 1 | 3 |
| | res. eq. units | - | 48.200 | 10.000 | 452.412 |
| Quantity of mud destined to agriculture | Tons | - | 162 | 1.274 | 0 |
| Quantity of mud destined to dumping | Tons | - | 3.427 | 0 | 7.236 |
| Quantity of mud destined to thermodestruction with thermic reutilization | Tons | - | 0 | 0 | 0 |
| Quantity of mud destined to thermodestruction without reutilization | Tons | - | 0 | 0 | 0 |

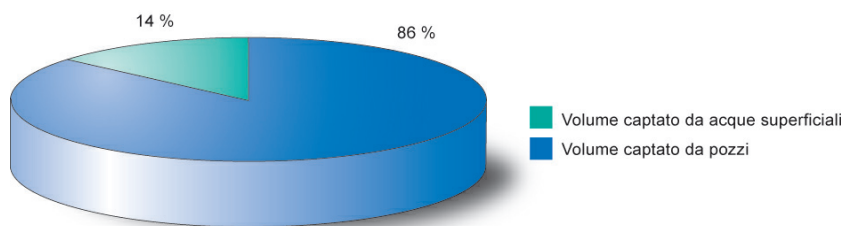


Table 6
General data referred to the Water Service Companies – Year 2005

| GENERAL DATA | Unit of measurement | ACM | ASP | SPIM | VESTA |
|---|---------------------|---------|--------|--------|---------|
| Number of Municipalities | n. | 17 | 1 | 5 | 2 |
| Resident citizens | n. | 252.580 | 51.024 | 66.503 | 282.334 |
| Years of reference | Year | 2005 | 2005 | 2005 | 2005 |
| Surface of the territory | Km ² | 500 | 96 | 125,78 | 457 |
| Fluctuant citizens | n. | - | 9.692 | - | - |
| Years of reference | Year | - | 2005 | - | 2005 |
| Number of total users for the aqueduct service | n. | 87.914 | 14.000 | 17.582 | 128.071 |
| Number of users without water meter | n. | 0 | 0 | 49 | 0 |
| Number of users with water meter but without lecture of the Water Service Company for one or more years | n. | 0 | 0 | 0 | 3.714 |

Below is reported a general scheme about the current condition of the water re source; the data have been partly extracted from the Water Master Plan (2001) and partly from the forms sent to the COVIRI and from ISTAT (Statistic Institute, year 2005).

Water Supplying

The supplying works within the ambit's territory are divided into wells and watercourses' derivations and they are reported in the table below.

Table 7
Wells and derivations by watercourses within the AATO's territory – Year 2005

| Supplying works | n. | Extracted or derived average annual discharge (m ³) |
|--------------------------|-----------|---|
| Wells | 53 | 92.180.659 |
| Watercourses' derivation | 2 | 14.531.439 |
| Total | 55 | 106.712.098 |

Figure 7
Extraction from wells and from surface waters

Volume picked up form surface waters
Volume picked up from the wells

| Gestore | Anno di riferimento | Emunto o derivato (m ³ /anno) | Acquistato da altri acquedotti | Fatturato all'Utenza (m ³ /anno) |
|---------|---------------------|--|--------------------------------|---|
| VESTA | 2005 | 61.714.906 | 1.419.821 | 42.120.420 |
| ACM | 2005 | 32.493.768 | 91.633 | 20.865.831 |
| ASP | 2005 | 7.000.000 | 546.315 | 5.514.483 |
| SPIM | 2005 | 5.503.424 | - | 3.324.777 |
| Ambito | 2005 | 106.712.098 | 2.057.769 | 71.825.511 |

The purifying works existing within the ambit's territory are two (plants of Cavanella d'Adige and Cà Solaro) and both of them treat waters coming from surface waterbodies.

The adduction and supplying networks have a total length of 3.798 Km. The current average supply of networks is about 6 metres per citizen, as shown in the table below.

Table 8

Current average supply of aqueduct network per citizen within AATO's territory – Year 2005

| Water Service Company | Length (Km) | Resident population supplied by aqueduct | Metres/citizens supplied |
|-----------------------|-------------|--|--------------------------|
| VESTA | 1.325,30 | 282.334 | 4,7 |
| ACM | 1.878,08 | 252.580 | 7,4 |
| ASP | 313 | 51.024 | 6,1 |
| SPIM | 281,33 | 43.000 | 6,5 |
| TOTAL | 3.797,71 | 628.938 | 6 |

The resident population supplied by the aqueduct within the ambit's territory, separated into Water Service Company, is shown in the following table.

Table 9

Population supplied by the aqueduct within the AATO's territory – Year 2005

| Water Service Company | Resident population until 2005 | Resident population supplied by aqueduct | In percentage |
|-----------------------|--------------------------------|--|---------------|
| VESTA | 282.334 | 282.334 | 100% |
| ACM | 252.580 | 252.580 | 100% |
| ASP | 51.024 | 51.024 | 100% |
| SPIM | 66.503 | 43.000 | 65% |
| TOTAL | 652.441 | 628.938 | 96% |

The annual minimum extracted or derived volume values, put into the system, supplied or invoiced (reported in cubic metre/year) are shown in the following table, separated into Water Service Company.

Table 10

Derived, extracted and invoiced annual volumes for each Water Service Company within the AATO's territory – Year 2005

| Water Service Company | Reference year | Extracted or derived (m ³ /year) | Purchased from other aqueducts | Invoiced to the users (m ³ /year) |
|-----------------------|----------------|---|--------------------------------|--|
| VESTA | 2005 | 61.714.906 | 1.419.821 | 42.120.420 |
| ACM | 2005 | 32.493.768 | 91.633 | 20.865.831 |
| ASP | 2005 | 7.000.000 | 546.315 | 5.514.483 |
| SPIM | 2005 | 5.503.424 | - | 3.324.777 |
| Ambit | 2005 | 106.712.096 | 2.057.769 | 71.825.511 |

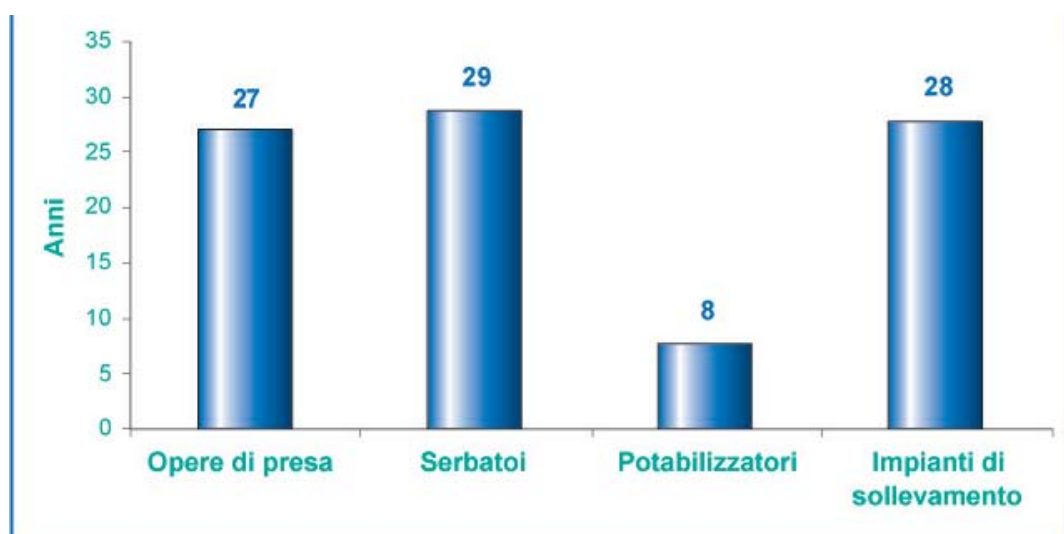


Figure 8
Quantity of extracted or derived water within the AATO's territory – Year 2005

The reservoirs are 40 and present a total storage capacity of about 103.890 cubic metres. The most frequent typology is the hanging reservoir (62,5% comparing to the total number) with a storage capacity of about 35.140 cubic metres; the basement reservoirs (37,5% comparing to the total number) show a total capacity of 68.750 cubic metres instead. The current average supply of the reservoirs within the ambit is 0,17 cubic metres per resident citizen supplied. The main critical state, that results from the recognition's analysis related to the aqueduct network, is given by the high percentage of old and degraded pipes, specially in the downtowns of Venice and Chioggia. The precarious condition of the pipelines affects rather uniformly all the management area (ACM, ASP, SPIM, VESTA) and it is due both to the average age and to the pipes' material. Their non optimal condition affects also the network leakages' percentage, affects the percentage of the leakages in the system, that comes up to 34% of the total extracted amount.

Table 11
Leakages referred to the Water Service Companies within the AATO's territory

| | A | B | C | D=(A+B)-C |
|--|--|--------------------------------|---|--------------------------------------|
| | Extracted or derived (cubic metres/year) | Purchased from other aqueducts | Supplied to the users (cubic metres/year) | Leakages' volume (cubic metres/year) |

| | | | | |
|-------|-------------|-----------|------------|------------|
| VESTA | 61.714.906 | 1.419.821 | 42.120.420 | 21.014.307 |
| ACM | 32.493.768 | 91.633 | 20.865.831 | 11.719.570 |
| ASP | 7.000.000 | 546.315 | 5.514.483 | 2.031.832 |
| SPIM | 5.503.424 | 0 | 3.324.777 | 2.178.647 |
| Ambit | 106.712.098 | 2.057.769 | 71.825.511 | 36.944.356 |

The average age of the purifying plants, the reservoirs and lifting apparatus is reported below.

Figure 10

Average age of the purifying plants, the reservoirs and lifting apparatus within the AATO's territory – Year 2001

Years

water plug works

Reservoirs

Purifying plants

Lifting apparatus

Water discharges

The sewage network has a total length of about 2.270 Km. The sewage pipes are rather recent comparing to the adduction and water supplying system. In fact, the main sewers' average age is valuable in about 23 years. In the graphics below is reported the percentage of population connected to the sewage system which makes use of the separated sewage networks

Figure 11

Separated sewage network's supply within the AAT per resident citizen – Year 2005

Nr. of residential equivalent units

Residential equivalent units supplied by the sewage

Residential equivalent units supplied by the separated networks

Figure 12

Residential equivalent units supplied by the separated sewage networks / Residential equivalent units supplied by the sewage – Year 2005

Asp

Spim

Vesta
Acm

The main critical state of the sewage system is given by the lack of the service's coverage. Currently, just about the 82% of the citizens is connected to the sewage (i.e. the downtown of Venice still hasn't a sewage network).

For what concerns the existing sewage, the main problems found in the territory regard:

- parasitical water's seepages with a consequent increase of water quantity that goes to the depuration plants during the heavy rain events;
- inefficiencies of the mixed sewage networks, which represent about the 48% of the total length of the sewages currently existing, that means 1.600 km of main sewers;
- inefficiencies of the meteoric waters draining system, with a consequent diffuse flooding risk during rain events.

Referring to the depuration plants, the ones existing within the AATO's territory are listed in the table below:

Table 12

List of the depuration plants existing within the AATO's territory – Year 2005

| Name | Water Service Company | Municipality | Capacity (residential equivalent units) | Receiving water body | Sewage typology |
|------------|-----------------------|-------------------|---|---------------------------|-----------------|
| Fusina | VESTA | Venice | 330.000 | Lagoon | Unitarity |
| Campalto | VESTA | Venice | 110.000 | Lagoon | Unitarity |
| Cavallino | VESTA | Venice | 105.000 | Adriatic Sea | Separated |
| Lido | VESTA | Venice | 60.000 | Adriatic Sea | Unitarity |
| Val da Rio | ASP | Chioggia | 160.000 | Brenta river | Unitarity |
| Comunale | SPIM | Morgano | 2.000 | Dese river Basin (lagoon) | Separated |
| Comunale | SPIM | Preganziol | 10.000 | Sile river Basin | Separated |
| Comunale | SPIM | Quinto di Treviso | 10.000 | Sile river Basin | Separated |
| Comunale | SPIM | Zero Branco | 3.000 | Dese river Basin (lagoon) | Separated |
| Total | | | 790.000 | | |

Figure 13

Maximum depuration capacity for each Water Service – year 2005

Asp
Spim
Vesta

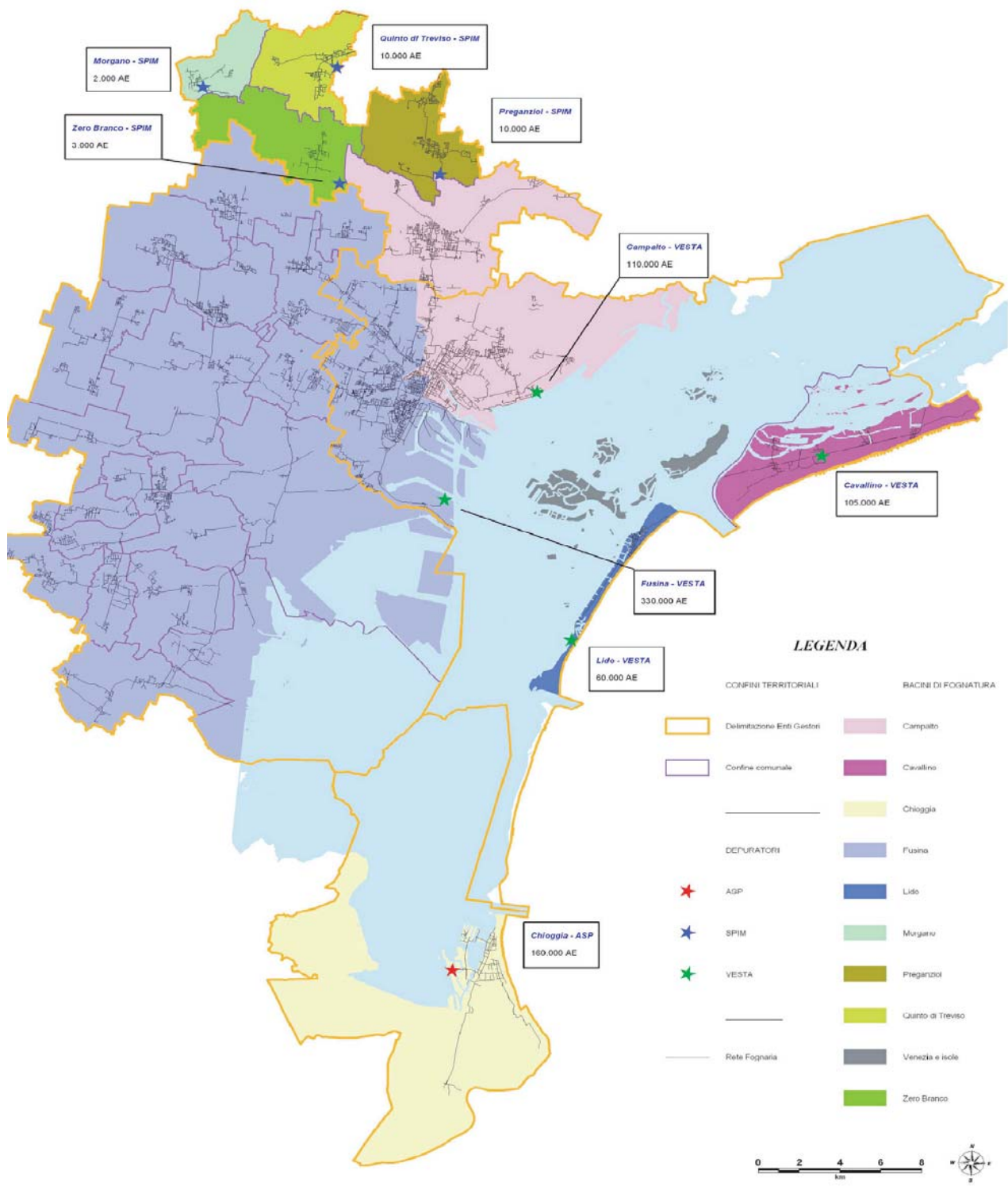


Figure 14

Localization of the depuration plants within the territory under the AATO's jurisdiction

Morgano – SPIM 2000 2.000 REU
Zero Branco – SPIM 3000. REU
Quinto di Treviso – SPIM 10.000 REU
Preganziol – SPIM 10.000 REU
Campalto – VESTA 110.000 REU
Cavallino – VESTA 105.000 REU
Fusina – VESTA 330.000 REU
Lido – VESTA 60.000 REU

Legenda

Territorial boarders

Water Service Company's delimitation
Municipal boarders

Depuration plants
ASP
SPIM
VESTA

Sewage network

Sewages' basins

Campalto
Cavallino
Chioggia
Fusina
Lido
Morgano
Preganziol
Quinto di Treviso
Venice and islands
Zero Branco

Table 13

Total residential equivalent units supplied within the AATO's territory – Year 2005.

* The sewages coming from the area under the jurisdiction of ACM are depurated by VESTA.

| Water Service Company | A: Residential equivalent units supplied by depuration plants | B: residential equivalent units supplied to be supplied by depuration plants | A+B: Depuration requirements |
|-----------------------|---|--|------------------------------|
| VESTA | 548.165 | 70.943 | 619.108 |
| (*) ACM | - | 37.704 | - |
| ASP | 48.200 | 2.100 | 50.300 |
| SPIM | 15.000 | 18.200 | 33.200 |
| Ambit | 611.365 | 128.947 | 740.312 |

As regards the depuration service's coverage, 17 Municipalities managed by ACM Company are connected to the Fusina plant (owned by VESTA). The Municipality of Chioggia delivers the sewages to Val da Rio plant, managed by ASP Company of Chioggia. The Municipality of Venice, managed by VESTA for the depuration, delivers the sewages of the islands to the plant located in Lido, of the East area to Campalto's plant, of Cavallino-Treporti to Cavallino's plant and, at last, of the South-West area of Mestre and the industrial area of Marghera to Fusina's plant. As regards the five Municipalities managed by SPIM, Mogliano Veneto is connected to Campalto's plant (owned by VESTA), while all the others are connected to other plants existing in their municipality's areas. The average age of the depuration plants located in the ambit's territory is 20 years. The most critical state is in the Municipality of Chioggia, which, owing to the frequent events of saline water going upstream, is affected by salty water seepages in the sewage's pipes, with a consequent loss of efficiency of the depuration plant that cannot reduce the minerals load. In the same time, the purifying plant, which extract water from the Adige river nearby its mouth, is not efficient when the salty water goes upstream. Chioggia's population is often obliged to supply water by tankers. As regards the quality controls of the water discharges coming from the depuration plants located in the territory, the AATO decided to verify the compliances of the pollutants to the limit values, during the operative audit done at the Water Service Companies. Moreover, every time there is an exceeding of the limit values, the Company must opportunely communicate it to the AATO.

6. GOALS AND PROGRAMMES FOR THE IMPROVEMENT

Table 14

Goals and environmental programme of the AATO's Lagoon of Venice's administrative office

| Indicators | Proposed intervention(s) | Resources € | Responsible person | Schedule | | | | | | |
|--------------------------------|--|--|--------------------|----------|-------|-------|-------|-------|-------|--|
| | | | | 06/07 | 12/07 | 06/08 | 12/08 | 06/09 | 12/09 | |
| TOE/year | Substitution of the existing air conditioning plant with a new one summer/winter | 30.000 (action 66 PEG 2006 – Action 66 PEG 2007) | GM and IOP | | | | | | | |
| m ³ water/year | Installation of flux reducers in every bathroom's taps | 2.000 (action 21 PEG 2006) | GM and IOP | | | | | | | |
| | Lowering of the float in the WC box | Internal resources | | | | | | | | |
| % of recycled paper/paper used | Purchase of recycled paper | 10 (Action 8 PEG 2007) | GM and ADM | | | | | | | |
| CO ₂ emissions | Cars conversion to methane | 3.000 (action 66 PEG 2008 – Action 66 PER 2009) | GM and ADM | | | | | | | |
| | Purchase of an electric bicycle | 500 (action 39 PEG 2008) | | | | | | | | |

| Environmental aspect | General goal | Goal |
|----------------------|---|---|
| Energy | Reduction of the energetic consumptions | 5% reduction from 4,18 TOE to 3,97 TOE |
| Water | Reduction of the water consumptions | 10% reduction from 79 cubic metres to 71 cubic metres |
| Green purchases | Increase in the use of recycled paper | From 46% to 51% |
| Energy | Reduction of the diffuse emissions | 20% reduction |

Table 15
Goals and environmental programme of the AATO's territory – Reffluent waters' reuse

| REFLUENT WATERS' REUSE | | | | | | | | | |
|--|-------------------------|---|-----------------------------|--|----------|---|---|---|---|
| Guaranteeing the carrying out of the foreseen activities/goals for the achievement of the strategic target | | | | | | | | | |
| Verification's annual report | | | | | | | | | |
| % of the achieved activities/goals foreseen for the reuse of the reffluent waters | | | | | | | | | |
| Target | Indicators | Proposed intervention(s) | Resources € | Responsible person | Schedule | | | | |
| | | | | | 0 | 1 | 0 | 1 | 0 |
| Carrying out of the study | Product | Development of strategies for the reuse of reffluent waters in the Chioggia' plant | 20.000 (action 80 PEG 2006) | GM and IAT | | | | | |
| Carrying out of the study | Product | Development of strategies for the reuse of reffluent waters in the Campalto's plant | 20.000 (action 80 PEG 2006) | GM and IAT | | | | | |
| Carrying out of the study | Product | Development of strategies to avoid improper uses through dual networks and pilot projects | 50.000 (action 92 PEG 2007) | GM and IAT | | | | | |
| Adjustment of the 19% of the total capacity (50.000 REU) for all the plants | % of adjustment | Adjustment interventions on the depuration plants for the reuse | 8.484.000 | Water Service Companies from the Water Master Plan | | | | | |
| 44 km of dual network per year | Km of dual network/year | Interventions for carrying out a water used supply network | 5.250.000 | Water Service Companies from the Water Master Plan | | | | | |

| | |
|----------------------|--|
| Goal | General goal |
| Proposed | Environmental aspect |
| Indicator | Water |
| General goal | Improvement of the resource's quality |
| Environmental aspect | Improvement of the resource and soil's quality |
| Water | Protection of the resource |
| Water | Protection of the resource |
| Water | Protection of the resource |

Interventions carried out directly by the AATO
Intervention carried out by the Water Service Companies

Interventi realizzati direttamente dall'AATO
Interventi realizzati dagli Enti Gestori

Table 16
Goals and environmental programme of the AATO's territory – Risks' prevention

| RISKS' PREVENTION (aqueduct's emergency) | | | | | | | | | | |
|--|--|---|---|----------|---|---|---|---|---|---|
| Guaranteeing the carrying out of the foreseen activities/goals for the achievement of the strategic target | | | | | | | | | | |
| Verification's annual report | | | | | | | | | | |
| % of the achieved activities/goals foreseen for the risks' prevention | | | | | | | | | | |
| Indicators | Proposed intervention(s) | Resources € | Responsible person | Schedule | | | | | | |
| | | | | 0 | 1 | 2 | 3 | | | |
| % of analyzed territory's coverage | Entrustment of the study for the development of the diagnosis of the water service's vulnerability | 450.000 (action 83 PEG 2006 – Action 83-92 PEG) | GM and IOP | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Decrease of the Risk's index IR | Intervention on the Cavanella | 29.595 | Water Service Company | | | | | | | |
| | Intervention on the Bivio | 163.695 | | | | | | | | |
| | Interventions on the Cà | 181.810 | | | | | | | | |
| | Adjustment of the telecontrol | 8.840 | | | | | | | | |
| Km pipes/year ; % cement-asbestos | Adjustment of the Water Service Companies' office | 8.000 | Water Service Companies as from the Water | | | | | | | |
| | Substitution of the cement-asbestos pipes in the Municipalities within the AATO's territory | 1.340.000 | | | | | | | | |

| | | | | |
|------------------------|---|---|--|--|
| Goal | | | | |
| Proposed indicator | | | | |
| Indicator | | | | |
| Environmental aspect | General goal | Taregt | | |
| Public health/Water | Inspection and identification of the potential risks linked to sabotage | From 8% to 100% | | |
| Public health/Water | Risk's prevention | From 2560 to 1300 | | |
| Public health/Asbestos | Reduction of dangerous materials used for the water | Substitution of 85 km of cement-asbestos pipes; from 63% to 56% | | |

Interventions carried out directly by the AATO
Intervention carried out by the Water Service Companies

Table 17
Goals and environmental programme of the AATO's territory – Responsible use of water's education

| RESPONSIBLE USE OF WATER'S EDUCATION | | | | | | | | | |
|---|-----------------------------|--------------------|----------|---|---|---|---|---|---|
| Guaranteeing the carrying out of the foreseen activities/goals for the | | | | | | | | | |
| Verification's annual report | | | | | | | | | |
| % of the achieved activities/goals foreseen for the responsible use of water's | | | | | | | | | |
| Proposed intervention(s) | Resource s € | Responsible person | Schedule | | | | | | |
| | | | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Establishment of the Users' Committee and annual meeting | 5.000 (action 82 PEG 2007) | GM and AGC | | | | | | | |
| Agenda 21 meetings to gather and acknowledge by the local community and the industrial sector all the information needed to | Internal resources | GM and AGC | | | | | | | |
| Employment of a person with the tasks of "general affairs and communication" | 250.000 (action 3 PEG 2008) | AGC | | | | | | | |
| Drafting of technical articles about the AATO | 5.000 (action 82 PEG 2007) | GM | | | | | | | |
| Pilot project on an AATO's quarter to sensitize about the | 19.250 (action) | GM and AGC | | | | | | | |

| Goal | Proposed indicator | Indicator | General goal | Target | Indicators |
|----------------|----------------------|----------------|---|----------------------------------|-----------------------------------|
| Water resource | Environmental aspect | Water resource | Involvement of citizens in a transparent management of the water | n. meeting/year | From 0 to 2 meetings/year |
| Water resource | Water resource | Water resource | Cooperation between AATO and citizens to guarantee an | n. meeting/year; n. participants | From 0 to 1 meetings/year; |
| Water resource | Water resource | Water resource | Improvement of the communication to the citizens about the aspect | n. persons | From 0 to 1 employed with a commu |
| Water resource | Water resource | Water resource | Sensization to a responsible use of the | n. article/year | From 4 to 10 publications |
| Water resource | Water resource | Water resource | Sensization to a | Cubic metres used | 2% decreases |

Interventions carried out directly by the AATO

Intervention carried out by the Water Service Companies

Table 18

Goals and environmental programme of the AATO's territory – Reduction of the pollutant load

| REDUCTION OF THE POLLUTANT LOAD | | Responsible person | Schedule | | | |
|---------------------------------|---|---|----------|---|---|---|
| Resources € | % of the achieved activities/goals foreseen for the reduction of the pollutant load | | 0 | 1 | 2 | 3 |
| 3.300.000 | Water Service Companies as from the Water | Water Service Companies as from the Water | | | | |
| 912.000 | Water Service Companies as from the Water | Water Service Companies as from the Water | | | | |
| 11.250.000 | Water Service Companies as from the Water | Water Service Companies as from the Water | | | | |
| 3.319.570 | Water Service Companies as from the Water | Water Service Companies as from the Water | | | | |
| 3.000.000 | Water Service | Water Service | | | | |
| 1.100.000 | Water Service | Water Service | | | | |
| 97.408.40 | Water Service | Water Service | | | | |
| 24.000 (action 80 PEG 2007) | GM and IAT | GM and IAT | | | | |
| 2.400.000 | Water Service | Water Service | | | | |
| 476.000 | Water Service | Water Service | | | | |
| 14.005.59 | Water Service | Water Service | | | | |

| | | | | | | |
|----------------------|--|---|--|--|--|--|
| Goal | | | | | | |
| Proposed | | | | | | |
| Indicator | | | | | | |
| Environmental aspect | General goal | Target | Indicators | Proposed intervention(s) | | |
| Water /soil | Improvement of the water resource and soil's quality | Annual substitution of 16.5 km of old pipes | Km substitute d/year | Extraordinary maintenance of the sewage network within the AATO's sewage system | | |
| Water /soil | Improvement of the water resource and soil's quality | Annual substitution of 3% of the old pipes (about 80% of total network substituted) | Km substitute d/year | Extraordinary maintenance of the water network | | |
| Water /soil | Improvement of the water resource and soil's quality | 3.000 units annual connections increase | N. of resident citizens connected to the | Intervention for the increase of the sewage service's coverage | | |
| Water /soil | Improvement of the water resource and soil's quality | Carrying out of the study | Product | Study aiming at defining criteria for the identification of the areas with individual or natural depuration systems (without sewers) and | | |
| Water /soil | Improvement of the water resource and soil's quality | Maintenance of 30.000 REU per year | N. of REU serviced | Extraordinary maintenance of the depuration plants | | |

Interventions carried out directly by the AATO

Intervention carried out by the Water Service Companies

Table 19

Goals and environmental programme of the AATO's territory – Reduction of the leakages

| REDUCTION OF THE LEAKAGES | | Schedule | | | |
|-----------------------------|---|----------|---|---|---|
| Resources | Responsible person | 0 | 1 | 2 | 3 |
| 50.000 (action 80 PEG 2007) | GM and IOP | | | | |
| 2.000.000 | Water Service Companies as from the Water | | | | |
| 200.000 | Water Service Companies as from the Water | | | | |
| 3.100.000 | Water Service Companies as from the Water | | | | |
| 251.000 | Water Service Companies as from the Water | | | | |

| | | | | | |
|----------------------|---------------------------------------|--|---|---|--|
| Goal | | | | | |
| Proposed indicator | | | | | |
| Indicator | | | | | |
| Environmental aspect | General goal | Target | Indicators | Proposed intervention(s) | |
| Water | Improvement of the resource's quality | Carrying out of the study | Product | Entrustment for the integration of the project "Less Loss" – Integrated method for the investigation and the reduction of the water | |
| Water | Improvement of the resource's quality | 1% annual decrease of the total network's losses (from 32% to 29%) | % of total network's leakages (difference between the | Leakages' investigation for the identification of the restoration interventions | |
| Water | Improvement of the resource's quality | Substitution of 38.750 water meter | N. of water meter substituted | Substitution of the water meter | |

Interventions carried out directly by the AATO
Intervention carried out by the Water Service Companies

Table 20
Goals and environmental programme of the AATO's territory – Reduction of the consumptions

| | | | | | | | | | |
|------------------------------------|----------|---|---|---|---|---|---|--|--|
| WATER SAVING | | | | | | | | | |
| Guaranteeing the carrying out of | | | | | | | | | |
| Verification's annual report | | | | | | | | | |
| % of the achieved activities/goals | | | | | | | | | |
| Responsible person | Schedule | 0 | 1 | 0 | 1 | 0 | 1 | | |
| | | 6 | 2 | 6 | 2 | 6 | 2 | | |
| GM and TIS | | | | | | | | | |
| GM and TIS | | | | | | | | | |
| GM and TIS | | | | | | | | | |
| GM and TIS | | | | | | | | | |

| Goal | Proposed indicator | Indicator | General goal | Target | Indicators | Proposed intervention(s) | Resources € |
|------|--------------------|-----------|----------------------|--|---------------------------|---|------------------------------|
| | | | Environmental aspect | | | | |
| | | | Water resource | Carrying out of the spy-well prototype equipped with | n. of piezometers | Piezometers carrying out to monitor the stratum | 106.000 (action 75 PEG 2006) |
| | | | Water/soil | Carrying out of the study | Product | Entrustment of a study for the hydrogeological balance aiming at evaluating the amount of the water | 176.000 (action 81 PEG 2006) |
| | | | Water resource | Carrying out of the study | Product | Carrying out of the SIRIO/SICI pilot project (phase II) | 145.000 (action 80 PEG 2006) |
| | | | Water resource | Data collection about the Water Service Companies' | N. of data collected/year | Audit at the Water Service Company | 10.000 (action 80 PEG 2007) |

Interventions carried out directly by the AATO

Intervention carried out by the Water Service Companies

7. CERTIFICATION BODY AND VALIDITY

The certification body chosen for the validation of the Environmental Declaration according to the Reg. 761/2001 is Certiquality Srl, Via G. Giardino, 4 20123 Milano, accredited with nr. IT-V-001. The validity period of the following Environmental Declaration is three years from the date of validation, that is 31st July 2007.

The annual updates of the Environmental Declaration will be sent, as foreseen by the Reg. CE nr. 761/2001, to the competent body and after the validation the data will be available for the public.

For more information about the Environmental Management System and about the Environmental Declaration, please contact:
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GM: general manager
IOP: hydraulic engineering and works
IAT: territorial environmental engineering
AMM: administration, accounting, balance, supplying
AGC: general affairs and communication
TIS: hydrogeology and TIS