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Florence and its Waters
(1945-1980)

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by Federico Paolini (Siena University)

Between reconstruction and development (1945-1965)

Water management politics

The city of Florence has since time immemorial shared its space with the rivers which cross it. The largest is the Arno – the eighth river in Italy in importance (241 km) – which divides it in two, crossing it from east to west. From the surrounding hills the torrents Mugnone, Terzolle, Mensola and Affrico (the latter covered in its lower reaches) descend into the Arno. There also are a number of lesser streams (Santa Cristina, S. Gervasio, Piagentina, Anconella, Ricorboli) which have been channelled as a consequence of urban development. The western part of the city is also crossed by the stream Fosso Macinante whose original function (already mentioned in the first half of the 14th C.) was to collect the waters of the Arno in case of flooding and divert them towards the open countryside, whereas in the mid 16th C. was to power a series of mills. In the course of time, Florence – situated as it is in the middle of a basin surrounded by mountains – has suffered from numerous floods, often with disastrous consequences. The most serious ones, before the 1966 flood, took place in 1269 (October), in 1333 (November), in 1547 (August) and in 1844 (November).

The frequent inundations have always been favoured by a profusion of destabilizing geological events, which characterize the Arno basin, and which are due to the nature of the soil: impermeable and prone to erosion. Beginning from the first half of the 20th C. to these natural causes of disruption, others have been added by a pattern of growth based on urban expansion and industrialization, which has deeply altered the uses of resources. Florence and the communes of its province, are a typical example of how a territory can be deeply altered by such factors, technological and social (i.e. Fordism, industrialization, urban expansion, large use of oil and electricity, expansion of private transport) which J. J. McNeill identified as the cluster of the motorized city¹.

¹ J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth Century World*, New York, W. W. Norton & Company, 2000.

The consequence of the acceleration of urbanization and industrialization, which has taken place after 1950, has been a radical transformation and a serious deterioration of the environment.

The most significant effect has been a rapid geological disarray caused by the desertion of upland and hill agriculture, which led to the collapse of the capillary drainage system of cultivated fields; by the dredging of river beds for obtaining building materials, by a significant increase in earthworks (i.e. excavations, trenches, ditches), indispensable for creating the infrastructures, which set off a chain of processes of degeneration of the soils. From the progressive occupation of river beds – of those portions of river beds which in case of flood filled up avoiding the overflowing of the river – which were destined both to housing and industry².

Between 1945 and 1965, local administrators – whose priorities were to deal with unemployment and housing shortage, notwithstanding the gravity of the situation – decided not to concern themselves with the problem in fear of hampering economic expansion. It is clear that in their view the good management of water and soil came second to the needs of expansion. The main actions were the study of a plan for river management contemplated by a law of 1952, which never came into being, and a study of the geological situation of the Arno basin, promoted by councillors for agriculture in the provinces of Tuscany of May 1965. It was not even considered that the existing system of flood warning consisting of antiquated hydrometers and rain gauges totally disconnected and without co-ordination, might be improved to monitor the entire Arno basin.

So far as concerns the commune of Florence, its water management policy was chiefly directed towards drainage and water supply systems.

Until the 1950s, the drainage system of Florence was still the same created in the 1860s and 70s, consisting of three outlets (central, northern and southern), from the manifold drain called «Goricina» which flowed into the Fosso Macinante (itself become a manifold drain) and by still more ancient drains (i.e. the so called «great drains of Ripoli and Gusciana»)³.

² *Una nuova politica del suolo e delle acque*, “La Regione”, n. 19-21, September-November 1970, pp. 12-30.

³ On the drainage system of Florence there is a book essentially aimed at the general public but well documented. Cf. D. Ottati, *Il ventre di Firenze. Storia della fognatura dall'epoca romana a oggi*, Firenze, Editoriale Olimpia, 1999.

The need to modernize the entire drainage system in answer to the requirements of an ever expanding city, was discussed in a meeting of the Council on November 6, 1950 (the leader of the city council was then Mario Fabiani, a member of the Italian Communist Party) when, for the first time, the proposal was made to put into operation a system of double drainage (the first, the so called «white drainage», would drain rainwater avoiding flooding, the second would serve the sewerage) which had been already approved by a special Health Authority Commission in the 1940s. It was envisaged that the scheme, which had no budget, would be completed within 10 to 15 years.

The problem of drainage became again an issue only in 1957, when the Municipal Council (whose cabinet was led by Christian Democrat Giorgio La Pira) concerned itself with the building of a new residential quarter with 6.000 flats in an area south-east of the city called Sòrgane. It was in fact necessary to provide the area with suitable drainage system capable of collecting the sewerage of the new settlement. However, between the end of the 1950s and the first half of the 1960s, successive administrations renounced to the elaboration of a project of general restoration and restricted themselves to the adjustment of the old drains wherever they saw it necessary. In March 1964, the Centre-Left cabinet led by Giorgio La Pira approved a deliberation which denounced the faults of the city's drainage system. In the following years – during which the city was governed by commissary as a result of a complex political crisis which parties were unable to resolve – this denunciation fell into oblivion until the great flood of 1966 which brought home the structural faults of the entire drainage system.

The aqueduct, after all, was not in better conditions⁴. From the time of its foundation to the first decade of the 20th C. the chief water supply of Florence had been underground water. Almost every house had its own private well (Florence had more than 10.000 wells). The city's aqueduct was itself relying on the water table until 1912 when it was decided that the waters of the Arno should be exploited by means of a plant which was to be built in a place called «Anconella», in the southern part of the city. In 1928, during the Fascist era, the Podestà authorized the building of the aqueduct of S. Maria a Mantignano.

By 1946, soon after the end of the Second World War, the problems concerning drainage were essentially three: a) the inadequate capacity of the aqueduct (carrying about 60.000 m³ per day) which did not satisfy the need of 85.000 m³; b) the recurring

⁴ On the Florentine aqueduct cf. D. Ottati, *L'acquedotto di Firenze dal 1860 ad oggi*, Firenze, Vallecchi, 1983.

summer droughts due to the seasonality of the Arno which carries little water at its lowest (below 3 m³ per second), forcing an under utilization of the Anconella plant; c) the precarious hygienic situation determined by the water supply pipes which almost entirely ran inside the drains. Only in 1953, the Centre cabinet led by Giorgio La Pira named a Commission with the task of finding solutions for increasing the production of drinkable water. The final report, consigned in 1954, advised the Florentine administration to agree with the electricity company Selt-Valdarno the exploitation of the reservoirs of Levane and La Penna, a plan for the exploitation of the torrents Carza, Carzola and Terzollina (situated in the basin of the river Bisenzio), and the creation of a reservoir by damming the Bisenzio itself (a river which crosses the city of Prato descending from the Tuscan Aemilian Apennines) to be utilized both for domestic use and for the production of electricity. The hypothesis of utilizing the Bisenzio, however, caused a conflict between Florence and Prato whose municipal administration voted in April 1956, a bill stating the «absolute binding necessity, for the city of Prato and for its territory, to use all the water of the Bisenzio».

Consequently, in November 1958, the municipal Council of Florence approved a decision in which – in order to increase the production of 2.000 litres per second, in an effort to confront the perennial scarcity of water – it was envisaged that two new aqueducts should be built: a reservoir supplied by the torrents Carza and Carzola, and the damming of the torrent Pesa, respectively with a capacity of 7 and 17 million m³. Still in 1958, a project was presented signed by Civil Engineer Cambi for the creation of a reservoir on the river Sieve, which should supply the aqueducts of both Florence and Prato. The plan proposed by Cambi, however, had the only effect of stopping the building of the other two plants causing a long delay which lasted nearly three decades. In 1961, meanwhile, a Commission was created (known as «the Seven») with the allotted task of presenting to the municipal Council the best possible alternative to a new aqueduct. The choice fell upon the Sieve and, secondarily, upon a further project which contemplated the exploitation of the torrent Ema. The job of working out the executive project for the Sieve reservoir (Lago del Bilancino) was given to the man who proposed it (Civil engineer Guadagni), only in June 1963. Two more years passed before the administration of Florence approved the deliberation (December 1965) necessary for beginning the study of the new city water system network, which now included the Sieve aqueduct.

At the time of the flood of November 4th, 1966 the hydraulic problems of Florence remained unsolved: the city's network of drains and water supply remained the one put into operation between the 19th C. and the 1930s.

Pollution

Until the beginning of the 1960s, to the structural deficiency the problems of pollution emerged. The situation of rivers and torrents became a concern, not only in Florence but in the entire suburban area of the city⁵.

So far as concerned the Arno, the situation was beginning to deteriorate on the eastern outskirts of Florence where the river received the sewerage of the suburbs of Compiobbi (paper mills, galvanic, and plastic materials) and Bagno a Ripoli (paper mills, galvanic, chemical, and housing sewerage). At the extreme western outskirts the quality of water deteriorated further as a consequence of the tributaries of the Arno, the Mugnone and Terzolle which were highly polluted by housing sewerage and industrial discharges of the industrial plants of Rifredi, and the sewerage of Careggi hospital. Near Signa – after having received the water of the Greve, Vingone and Bisenzio – the state of the Arno was highly critical. On coming out of Florence the river carried, in fact, significant quantities of ammonia, nitrites, nitrates, detergents, phosphates, chlorides and traces of chromium and cyanides⁶.

The situation of the tributaries, was actually worse than that of the Arno itself, with the exceptions of the Sieve and the Pesa, which were the least polluted thanks to the scarcity of industrial plants and urban conglomerates along their courses⁷. The Greve appeared highly polluted by civic sewerage and detergents which reached «enormous values» so as to be responsible for the pollution of a high number of wells⁸. The torrent Vingone collected and discharged into the Arno the sewerage of two of the most densely industrialized areas of the province (Scandicci and Lastra a Signa) where there were foundries, galvanic plants, silversmiths, salami factories and numerous plants

⁵ Cf. Regione Toscana, *Mappa degli inquinamenti idrici della Toscana*, Firenze, 1974.

⁶ Cf. Regione Toscana, *Mappa degli inquinamenti idrici della Toscana*, p.62.

⁷ The Sieve joins the Arno at Pontassieve; the Pesa, instead, near Montelupo, after have crossed Sambuca, Ponte Nuovo and Cerbaia.

⁸ Cf. Regione Toscana, *Mappa degli inquinamenti idrici della Toscana*, p. 84. The Greve, which joins the Arno north of Mantignano, collected the urban sewerage of Galluzzo, Grassina, Ponte a Ema, Poggio Imperiale, S. Gaggio, Due Strade, S. Felice a Ema, area of Scandicci (Scandicci, Bagnese, S. Giusto a Signano, Casellina, Ponte a Greve) and of some densely populated quarters of Florence (Sollicciano, S. Bartolo a Cintoia, Mantignano).

concerned with metalwork, plastic materials, soaps, waxes, «pongo» (a commercial name for a material for modelling), and electrical batteries⁹.

The Bisenzio carried a high load of pollutants since it received the sewerage of Vernio, Vaiano and Prato, the discharges of the numerous industries of the Calenzano, Sesto Fiorentino, Campi Bisenzio and Signa areas, and finally the urban and industrial discharges of the area to the north west of Florence. The waters of the river contained a high percentage of ammonia, nitrites, detergents, sulphates, chlorides and phosphates. Furthermore, the fragments of wool fibres dumped by textile plants (about 4800 kg per day) caused a serious lack of oxygen (every mg of fibre destroys 1.19 mg of oxygen)¹⁰.

The biennium of the flood (1966-1967)

On the 4th of November 1966, the front page of the daily paper “La Nazione” carried a alarming headline: “*Dramatic situation at 6 am. THE ARNO FLOODS FLORENCE. The river has flooded the works of the aqueduct at Anconella: many areas of the city will remain without water. The river has gone over its banks at Rovezzano and Compiobbi. Many houses flooded. The goldsmiths of Ponte Vecchio are rescuing their valuables. Impressive night spectacle from the Lungarni. The Arno overflows the parapets of Lungarno Acciaiuoli. Many families leave their homes. The railway and the motorway from Florence to Rome are closed*”.

Actually, that morning few Florentines would read the newspaper. At 7.20 some area of the city had been flooded and at 9.35 the level of the water had risen above two metres in the centre of the city, flooding even Piazza del Duomo.

At about 17.30, the RAI (Italian Radio and TV) headquarters were able to issue a brief radio bulletin:

This is Florence. The news which we are able to issue are unfortunately scarce and fragmented. We too are stranded: the entire historical centre of Florence is under water. To say ‘water’ is an approximation: streets are in fact impetuous and dangerous torrents. The noise you hear comes from the water that rushes below us: it is a torrent with a

⁹ Cf. P. Innocenti, *L'industria nell'area fiorentina*, Firenze, 1979, p. 702. The Vingone, which flows into the Arno near Lastra a Signa, collected the discharges of Lastra a Signa and of private housing along the road n. 67.

¹⁰ Cf. Regione Toscana, *Mappa degli inquinamenti idrici della Toscana*, pp. 102-105. The Bisenzio flows into the Arno near Signa.

speed of 40-50 km per hour. We have witnessed the work of the fire brigade: their boats and crafts run the risk of capsizing and it appears impossible for them to operate any rescue. Below the windows of RAI we have seen cars and households being rushed away like twigs...all shops have been flooded, their shutters blown open, their windows shattered. It is a nightmarish and painful spectacle. [...] Here we are: let us carry on. The vehemence of the flood is such that no rescue can be operated. Electricity and drinkable water are not available. The Prefect has ordered that all shops, especially food shops, should remain open wherever the flood has not reached. The only areas are Campo di Marte and Viale dei Colli: The whole of Tuscany is since yesterday affected by the flood. The Arno still grows: all areas crossed by the river are under alarm...¹¹

At 19.30, still the RAI headquarters announced that the level of the water was decreasing after having reached 4 metres above street level in many quarters of the city (in some areas of the centre it had reached 5 meters)

The flood caused serious damages to the architectural heritage (13.493 families had to leave their homes), to industry (more than 12.000 jobs were lost and 3.997 workers in the crafts and trade industries were suspended or sacked) to hotels (47% of hotels were damaged), to arts and culture (over 1.400 works of art, and almost two million books in libraries in the city)¹². During the months which followed the flood, there was a succession of minor floods caused by the rupture of pipes, drains, while the flood water – which caused raising damp in buildings – continued, saturated with petrol and salts (nitrates of potash and sodium) to cause damages to monuments and dwellings.

During the entire course of 1967 there were discussions on who to blame for the flood. The first to have the finger pointed at were the successive local governments of the second post-war period, who, as we have seen, had failed to build an efficient drainage and water supply system, and a system of control for the Arno and its tributaries. There is no doubt that the inadequacy of the drainage system contributed to the seriousness of the calamity: the flood wave – which rushed through the city at a speed of 60 km per hour, carrying 4.200 m³ of water per second – literally caused the explosion of the drains.

¹¹ L. Giannelli (Ed.), *L'alba vinse la notte. 4 novembre 1966, l'alluvione a Firenze*, Firenze, Scramasax, 1996, p. 59.

¹² Cf. *L'alluvione lunga un anno* and *Alluvione, rendiconti e preventivi*, "La Regione", n. 16-18, December 1967.

Then there was the question of the lack of warning which involved the Chief of Police and the Prefect: in a conversation which took place in the early hours of November 4th, the two authorities decided not to warn the entire city since the danger «did not seem to justify alarm» and for fear of disorder caused by traffic jams since people might rush to reach the motorway and the hills¹³. Furthermore, the debate went on to the role of the dams of La Penna and Levane (built in the 1950s by the Electricity Company Selt-Valdarno, for the production of hydro-electric energy), and situated in the province of Arezzo, at about 80 km from Florence. According to an intense persuasion campaign, the flood wave which reached Florence originated from the sum of the flood wave of the Sieve, and that of the two dams (about 2.000 m³ per second from 3 to 6 a.m. of November 4th, 1966). The argument became animated when the magistrates discovered, in February 1967, that the Selt-Valdarno had built the plant of Levane without the necessary authorizations¹⁴. However, an inspection ordered by the Public Accusation highlighted the bad conditions in which versed, at the time of the flood, all river banks, thus discharging the dams of Levane and La Penna which experts said only caused the level of the Arno to raise by a few centimetres.

During the fiery but sterile debate, one of the few useful comments came from Professor Livio Zoli, chair of the Faculty of Agriculture, Forestry and Water Studies, at the University of Florence. He proposed an articulate plan for the safeguard of the banks of the Arno based upon the elimination of the two weirs built across the Arno within Florence (this however would have meant the «re-foundation of all bridges as well as the rising of all parapets and walls of the Lungarni»), on the construction of at least ten reservoirs, «with the exclusive role of defence» placed along the course of the river, and the excavation of an underground canal capable of carrying at least 1000 m³ per second across the urban area¹⁵.

On their part, institutions entered the debate with a disorderly array of initiatives, among them was a long succession of round tables and a singular proposal: the application of Florence as the seat of the Olympic Games of 1976 (put forward by the daily paper “La Nazione” for the purpose of accelerating the restoration of the city), which fortunately was later discarded. In March 1967, the *Regional Union of the Provinces of Tuscany* promoted a round table aimed at discussing the plan for the realization of a «system for

¹³ F. Nencini, *Firenze, i giorni del diluvio*, Firenze, Sansoni, 1966, pp. 31-32.

¹⁴ Cf. *L'alluvione lunga un anno*, F. Nencini, *Firenze, i giorni del diluvio*, pp. 39-42, G. De Angelis, *Le acque dell'Arno*, Lanciano, 1969.

¹⁵ F. Nencini, *Firenze, i giorni del diluvio*, pp. 36-37.

the rational management of water resources and river basins». In September the mayors of Fiesole, Pontassieve, Rufina and Pelago invited the municipal administration of Florence to call in assembly all the communes affected by the flood with the purpose of «avoiding municipal solutions». In October representatives of the affected communes of the Province of Florence met and decided «to rapidly proceed to the reconnaissance of damages suffered by water defences all over the province, to a census of the repair works already planned and financed, and to the monitoring of works in progress»¹⁶.

At the close of 1967, the lack of ability in decision making displayed by the administrators of Florence – engaged in calling meetings and conferences which never produced a single plan for the control of river basins – had turned the flood of 1966 into yet another missed opportunity for understanding the causes of soils and rivers degradation and for starting a global and definitive programme of hydro-geological rearrangement, placed within the context of a wider territorial development plan.

This is not all: various enquiries point at 1967 as the year in which the foundations were laid for a new age of urban expansion in areas subject to the risk of flooding. This was due to the issuing of a planning law (number 765 of 1967, known as the «bridging law») which – under the declared scope of helping the economy – allowed the expansion of buildings in all areas of the district. The result was urban saturation of the Arno basin¹⁷.

The uncertain beginnings of clearance (1968-1980)

In the years following the flood, the crisis of water resources became the most evident (and debated) issue concerning the environmental emergency which concerned Florence.

The most apparent sign was the pollution of surface waters, made prominent by an abundance of froth floating on the Arno and displaying extravagant colours, which entered the Arno from streams where textile industry plants discharged their liquid refuse. In an attempt to halt this degradation, the municipal Cabinet of Florence approved an order which forbade the use of non biological detergents, beginning from the 20th of January 1971. The measure – as was explained by mayor Luciano Bausi during a conference organised for the purpose of illustrating this initiative – had become necessary in order to contain the contamination of water by detergents, whose level had

¹⁶ *L'alluvione lunga un anno.*

¹⁷ Autorità di Bacino Fiume Arno, *Trasformazioni del territorio e sviluppo dell'edificato lungo il corso dell'Arno e degli affluenti (1954-1993 e 1995)*, Firenze, 1987.

reached values far superior to those established by the World Health Organization (500 gamma/litre): in fact, in December 1970, the tests conducted by Hygiene and Prophylaxis Office of the Province had detected values ranging from 1.900 to 3.800 gamma/litre¹⁸. Notwithstanding the largely symbolic nature of this order – since it ignored the sewerage and industrial waste discharged into the river, which contained (chrome, cyanide...) far more toxic than any detergents – this Florentine measure sparked off a debate which grew to a national dimension, anticipating the approval of a bill on «biodegradable synthetic detergents», presented by Mariotti, the Minister of Health¹⁹.

In 1972, the Regional Council approved a resolution with which it invited local administrations to agree on common quality standards concerning «domestic and industrial discharges» as established by the Regional Government²⁰. Two years later the first «Map of water pollution» was published and a law was approved (27th May 1974, number 22) which provided finances for a programme of «works for the detection and utilization of water resources and for the purification and disposal of liquid waste». These were measures intended to tackle the issue of drinkable water – regarded as a priority since the Florentine aqueduct was chiefly fed by the water of the Arno – which, however, were not apt for coping with the crisis of the entire Florentine water supply system, afflicted as it was by two critical factors which by now had become endemic: the scarcity of water and the serious hydro-geological degradation, as it had been underlined by the 1966 flood.

From 1959 to 1969, mean daily water consumption had more than doubled: in 1969 the mean *pro capite* need amounted to 372 litres. In 1970 the ancient Florentine aqueduct produced 172.000 m³ per day of water: the plant of Anconella, by now technologically inadequate, scarcely safe and very costly – provided 135.000. The plant of Le Cascine (fed by 25 wells constantly threatened by pollution by urban sewerage) provided 25.000 m³ per day. The Mantignano plant provided 12.000 since the constant lowering of the water table had caused a reduction in supply amounting to more than 8.000 m³ per day. The problem of the lowering of the water table was particularly serious since it prevented any increased exploitation of underground wells which provided for about

¹⁸ Comune di Firenze, *L'inquinamento delle acque. Atti ufficiali del convegno*, Firenze, January 29th, 1971.

¹⁹ *Law March 3, 1971, n. 125*. This measure prohibited the production, trade, import and use of non biologically degradable products by 80 %.

²⁰ *Proposti valori standard unici per gli effluenti domestici e industriali*, "Toscana Consiglio Regionale", 1972, pp. 53-55.

20% of the need. What prevented any increased exploitation of wells was also the deterioration of water quality: a significant number of wells was in fact polluted with ammonia and with organic chlorinates. This meant that in Florence only one source of water remained certain, and that was the Arno²¹.

In order to confront the scarcity of water afflicting the city, the municipal administration of Florence presented in October 1970, an intervention plan centred upon the improvement of the Anconella water works (within a span of ten years a doubling of the production up to 3.000 litres per second was foreseen) and on the fast construction of the Bilancino reservoir with the Sieve aqueduct, which would have insured a sufficient supply of drinking water at least until 2000. Meanwhile works to separate the water supply from the drainage system went under way.

As to hydro-geological deterioration, in 1967, ministers of Public Works and Agriculture had instituted an *Infra-ministerial Commission for the study of water management ad soil defence*.

During the meetings of February 17th and December 29th, 1968, the sub commission for the Arno elaborated a plan for the rehabilitation of the entire river, suggesting a system of 23 reservoirs whose function was to curb any flood wave threatening Florence. During the first half of the 1970s, the political debate continued to drag its feet around some proposals put forward by the Commission which, in 1970, had been heavily criticised during the course of a meeting called «A plan for the Arno», since, according to its detractors, they faced the problem of defence from flood «in the most traditional and obtuse way, in the sense of a true *war to water*» without envisaging neither an evaluation of the needs for domestic industrial agricultural uses, nor a balanced distribution of resources²². A difficult *empasse* was thus reached.

In the first place on account of a kind of latent conflict between the regional government – whon since its institution was inclined towards facing the «environmental issue» – and the communes, much more laid back on ecological issues. The administrations of the more industrial communes in the area, were strongly set against any measures aimed at limiting the expansion of residential and industrial developments: the disorderly industrial and urban development was tolerated since it was regarded as necessary to alleviate social tensions fed by unemployment and housing shortage. In the second instance due to the pressures exercised by industrialists who – notwithstanding that they

²¹ Comune di Firenze, *Firenzecologia*, Roma, Il Ventaglio, 1987, pp. 20-32.

²² *Una nuova politica del suolo e delle acque per lo sviluppo economico-sociale del bacino dell'Arno*, "La Regione", n.19-21, November 1970.

declared themselves in favour of a project for the restoration of the Arno basin – they were absolutely against a check on urban expansion and not inclined on footing the bill for a fight against pollution²³. In the third instance, for the creation in 1974 of the *Consortium of Water Resources, Scheme 23* which brought together the communes of Bagno a Ripoli, Impruneta, Lastra a Signa, Montemurlo, Prato, Scandicci, Sesto Fiorentino and Vaiano. The constitution of such Consortium of communes ended up with blocking action aimed chiefly at the purification of waters, as promoted by the commune of Florence between 1974 and 1975: the constitution of a purification plant for civic sewerage at S. Mauro a Signa and two filtering systems one at Settignano and in the «Manderi area». In 1976, «Scheme 23» started to consider the setting up of a purification plant capable of satisfying a population of 700.000 inhabitants, but it took almost ten years before an agreement was found on where to place such plant in an area (S. Colombano) astride the communes of Lastra a Signa and Scandicci.

Only in 1978 the definition of a *Pilot project for the restoration of the Arno Basin* was defined, and this envisaged the building of defences from floods for the city of Florence, and the regulation of the river Arno according to an «integrated programme for the utilization of water in defence of its quality». The final text of the *Pilot Project* envisaged the «construction of basins for a mixed use (regulation and containment of floods) or for the sole use of regulation», the «realization of local works in defence from floods» and the «extension of containment plants» with the aim of reducing by 90% the pollution caused by civic and industrial discharges. The document highlighted the chronic lack of drinking water and declared that the construction of new aqueducts had a «character of utmost urgency», and that it was «prejudicial» to any «development programme». So far as concerns industrial uses, it established two orders of priority: to insure the supply for industry – especially the textile industries of Prato – and making compatible the process of industrialization with the real availability of water resources²⁴.

Notwithstanding this discomfoting picture, interventions – even those described as priorities – were still in a draft stage: among these there were a reservoir in defence from floods, the basin of Bilancino, and the aqueduct of the Sieve (which Florence

²³ *Le linee del programma regionale di sviluppo economico*, “Toscana Domani”, November-December 1973.

²⁴ Cf. Regione Toscana, *Progetto pilota per la sistemazione del bacino dell’Arno. Rapporto finale. II: Organizzazione del progetto*, Firenze, 1978.

awaited since 1963), the canal for the overflow of the Arno, four purification plants for the Florence-Prato area.

In 1980, in observance of legal dispositions N° 319/1976 and N° 650/1979, the *Regione Toscana* approved the first biennial programme (1980-1982) of the *Regional Plan for the purification of waters*. This document too was in fact a little more than a declaration of intent, and reiterated the guidelines for intervention already included in the *Pilot Project*. For the Florentine area, the document envisaged «intervention schemes at a high level of definition and depth», and listed a series of interventions nearly all in their first planning stage²⁵.

In conclusion, thirteen years of discussions had produced a significant pile of documents which had never reached the stage of becoming works capable of starting a concrete process of restoration of the water system: Florence continued to wait an efficient purification plant (works for the plant of S. Colombano were started on June 18th, 1994) and also of defence works for confronting floods and the new aqueduct (the basin of Bilancino was completed in 1995 and became operational in 2002).

²⁵ Cf. Regione Toscana, *Piano regionale di risanamento delle acque. Primo programma di intervento 1980-1982*, Firenze, 1980.