



ITALY

**COMBATING  
ARIDITY**

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RICCIONE (RIMINI), WATERPARK ACQUAFAN:  
THE WATERPARK UTILISES SYSTEMS  
TO RECYCLE AND SAVE WATER.



## WATER SCARCITY AND THE EMILIA ROMAGNA MODEL

ARIDITY IS SQUEEZING ITALY WITH AN EVER MORE PAINFUL GRIP. BETWEEN UNFINISHED WORKS, LAST-MINUTE PROJECTS, AND A WATER-NETWORK THAT IS TOO OLD (WITH LOSSES IN SOME ZONES REACHING ALMOST FIFTY PER CENT), THERE IS, HOWEVER, A REGION WHERE THE SCARCITY OF RAIN IS BEING MANAGED IN AN EFFICIENT AND MODERN WAY: EMILIA-ROMAGNA, THE TRUE HEART OF ITALIAN AGRICULTURE.

IN TERMS OF PRECIPITATION, FOR THOSE AREAS ALONG THE RIVER PO THE YEAR 2017 WAS PARTICULARLY NEGATIVE. NEVERTHELESS, THE INFRASTRUCTURE OF THE REGION – ALSO KNOWN AS FOOD VALLEY, ONE OF THE AREAS IN EUROPE WHERE SOME OF THE MOST FRUIT AND VEGETABLES ARE CULTIVATED – WAS CAPABLE OF SATISFYING THE ENORMOUS DEMAND FOR WATER. HOW? THROUGH EVER MORE EFFICIENT SYSTEMS (LIKE THOSE GOVERNED BY THE LAND RECLAMATION AND DRAINAGE AUTHORITIES AND THE EMILIANO ROMAGNOLO CANAL, ONE OF THE MOST IMPORTANT HYDRAULIC WORKS IN ITALY), AN EVER-INCREASING NUMBER OF ARTIFICIAL RESERVOIRS, COMPANIES WHICH HAVE ADOPTED POLITICS OF WATER RECYCLING (AS IN THE CASE OF CONSERVE ITALIA), AND THE INTRODUCTION OF PRINCIPLES LIKE TECHNOLOGICAL EXPERIMENTATION.

HERE UNIVERSITIES HAVE BEEN THE ONES TO STUDY AND PROPOSE THE MOST INNOVATIVE SOLUTIONS. LIKE THAT OF PARMA WHERE THE RESEARCH GROUP IMEM-CNR DEVELOPED AN ORGANIC, ELECTROCHEMICAL TRANSISTOR THAT PROVIDES FEEDBACK ON WATER NEEDS DIRECTLY FROM THE PLANT. AND THE UNIVERSITIES OF FERRARA AND BOLOGNA, WHICH TOGETHER CAME UP WITH THE GST4WATER PROJECT, WHICH AIMS AT COLLECTING RAINWATER IN THE AREA OF CIVILIAN CONSUMPTION. AN ANCIENT NEED BUT ONE THAT IS NOW BEING HANDLED WITH SMARTPHONES.

GORINO (FERRARA), IVAN TAGLIATI AND HIS MOTHER LORENA INSTRUCTED IN HOW TO USE THE WATER CONSUMPTION COUNTER BY RESEARCHERS FROM THE UNIVERSITY OF FERRARA PARTICIPATING IN THE GST4WATER PROJECT. FROM THE LEFT: MARCO GOVONI, GIULIO RIBERTO AND FRANCESCO CASELLATO.



RESERVOIRS ALONG THE LAMONE VALLEY  
(FORLÌ), INDISPENSABLE FOR CROPS, LIKE  
KIWIS, WHICH REQUIRE A LOT OF WATER.



CHILDREN FROM THE PRIMARY SCHOOL OF RO FERRARESE WATCH A PUPPET SHOW AT THE FABBRICA DELL'ACQUA A SERRAVALLE (FERRARA), THE ENVIRONMENTAL EDUCATIONAL CENTRE BORN OUT OF THE C.A.D.F. (CICLO INTEGRATO ACQUEDOTTO DEPURAZIONE FOGNATURA) IN COLLABORATION WITH THE PROVINCE OF FERRARA, WITH THE INTENTION OF PROMOTING AWARENESS AND RESPECT FOR WATER RESOURCES.





BAGNO DI ROMAGNA (FORLÌ-CESENA). A TECHNICIAN WALKS ALONG A TUNNEL INSIDE THE RIDRACOLI DAM, WHICH SINCE THE '80S HAS PROVIDED WATER TO MORE THAN A MILLION PEOPLE ON THE RIVIERA ROMAGNOLA AND IN THE PLAINS OF THE PROVINCES OF FORLÌ-CESENA, RAVENNA AND RIMINI.

ISOLA PESCAROLI (CREMONA), THE IMAGE OF THE MADONNA DELLA FIDUCIA, QUEEN OF THE PO, IS LOADED ONTO A BOAT AND CARRIED IN A PROCESSION ON THE RIVER TO ASK FOR PROTECTION FROM FLOODS, LIKE THE PARTICULARLY VIOLENT ONE OF 2000.



THE NATURAL OASIS OF TORRE ABATE (MESOLA, FERRARA);  
THE 16TH CENTURY MONUMENT IS ONE OF THE SYMBOLS OF THE  
ESTENSI FAMILY'S GREAT INVOLVEMENT IN LAND RECLAMATION.



BAGNO DI ROMAGNA (FORLÌ-CESENA), WATCHING FILMS WITH VR GOGGLES AT THE IDRO ECOMUSEUM NEAR THE RIDRACOLI DAM, WHICH SINCE THE '80s HAS PROVIDED WATER TO MORE THAN A MILLION PEOPLE ON THE RIVIERA ROMAGNOLA AND IN THE PLAINS OF THE PROVINCES OF FORLÌ-CESENA, RAVENNA AND RIMINI.



BOLOGNA, SARA SIMONA CIPOLLA, A RESEARCHER WITH THE GST4WATER PROJECT AT THE UNIVERSITY OF BOLOGNA, UP ON THE 'GREEN' EXPERIMENTAL ROOF OF CIRI EDILIZIA & COSTRUZIONI: THE ROOF IS THERE TO TEST HOW EFFECTIVE IT CAN BE IN REDUCING METEOROLOGICAL WATER RUNOFF IN SEWERS.



BORETTO (REGGIO EMILIA), MUSEO DEL PO E DELLA NAVIGAZIONE INTERNA (THE RIVER PO AND INLAND NAVIGATION MUSEUM). GIORGIA BIA, COUNCILLOR OF CULTURE FROM THE TOWNSHIP OF BORETTO, CONSULTING OLD REGISTERS WITH PAYSTUBS AND WATER READINGS OF THE PO, CONSERVED IN THE CIVIL ENGINEERING ARCHIVES OF THE MAGISTRATE OF THE PO.





PARMA. RESEARCHER MICHELA JANNI FROM THE INSTITUTE OF MATERIALS FOR ELECTRONICS AND MAGNETISM (IMEM) - Cnr) CONTROLLING DATA FROM THE BIORISTOR SENSOR INSERTED IN A PLANT. THE SENSOR IS CAPABLE OF PROVIDING USEFUL INFORMATION ON THE WATER NEEDS OF THE PLANT.



ERIK CASTELLANI, MANAGER OF THE  
NATURAL OASIS OF TORRE ABATE (MESOLA,  
FERRARA), PREPARES TO CUT THE GRASS  
AROUND THE 16TH CENTURY MONUMENT,  
ONE OF THE SYMBOLS OF THE ESTENSI  
FAMILY'S GREAT INVOLVEMENT IN  
LAND RECLAMATION.





A PRIMARY SCHOOL FROM RO FERRARESE VISITS THE FABBRICA DELL'ACQUA IN SERRAVALLE (FERRARA), THE ENVIRONMENTAL EDUCATIONAL CENTRE BORN OUT OF THE C.A.D.F. (CICLO INTEGRATO ACQUEDOTTO DEPURAZIONE FOGNATURA) IN COLLABORATION WITH THE PROVINCE OF FERRARA, WITH THE INTENTION OF PROMOTING AWARENESS AND RESPECT FOR WATER RESOURCES.

PANOCCHIA (PARMA). IN THE FIELDS OF THE AGRICULTURAL COMPANY VITALI, NICOLA MAGNI FROM THE MUTTI COMPANY EXPLAINS TO ONE OF THE OWNERS, ROSETTA MORONI, HOW THE METEOROLOGICAL WEATHER STATION WILL COMMUNICATE THE VARIOUS FORMS OF DATA VIA APP, DATA THAT SERVE TO GIVE CORRECT WATER-RELATED INPUT FUNCTIONS.



BOLOGNA, WORKING AFTER NORMAL VISITING HOURS AT THE CONSERVA DI VALVERDE (ALSO KNOWN AS BAGNI DI MARIO), A SYSTEM OF UNDERGROUND WATER COLLECTION BUILT IN 1563.



BAGNO DI ROMAGNA (FORLÌ-CESENA), THE RIDRACOLI DAM, WHICH SINCE THE '80S HAS PROVIDED WATER TO MORE THAN A MILLION PEOPLE ON THE RIVIERA ROMAGNOLA AND IN THE PLAINS OF THE PROVINCES OF FORLÌ-CESENA, RAVENNA AND RIMINI.



FERRARA, MARCO FRANCHINI, PROFESSOR OF HYDRAULIC INFRASTRUCTURE IN THE ENGINEERING DEPARTMENT AT THE UNIVERSITY OF FERRARA AND SCIENTIFIC DIRECTOR OF THE GST4WATER PROJECT, POSES IN FRONT OF AN OLD MAP WITH HYDROGRAPHIC ELEMENTS OF THE AREA SURROUNDING FERRARA.





STUDENTS AT THE ABBEY OF POMPOSA (FERRARA), THE FIRST SETTLEMENT ON WHAT WAS THEN KNOWN AS THE "INSULA POMPOSIANA" ("SURROUNDED BY WATER") DATING BACK TO THE VI CENTURY. ITS MONKS WERE THE FIRST TO UNDERTAKE THE FORMS OF DRAINAGE IN THE AREA.

POLESINE PARMENSE (PARMA), SUNSET ON THE PO.  
AT BOTTOM LEFT, THE OLD PALLAVICINO CASTLE.





COMACCHIO (FERRARA), MUSEO DELTA ANTICO. DEALING WITH THE AMPHORAE IN THE ROMAN SHIP ROOM. THE SHIP, WHICH SANK BETWEEN 19 AND 12 BC, WAS FOUND IN 1981 IN THE AREA AROUND COMACCHIO.



CANALI DI SCOLO SCAVATI A MANO AGLI INIZI DEL NOVECENTO PER CONTO DELL'EX CONSORZIO DELLA GRANDE BONIFICAZIONE FERRARESE. (PER GENTILE CONCESSIONE ARCHIVIO DEL CONSORZIO DI BONIFICA PIANURA DI FERRARA).

CHILDREN FROM THE PRIMARY SCHOOL OF RO FERRARESE OBSERVE DROPS OF WATER IN A MICROSCOPE AT FABBRICA DELL'ACQUA IN SERRAVALLE (FERRARA), THE ENVIRONMENTAL EDUCATIONAL CENTRE BORN OUT OF THE C.A.D.F. (CICLO INTEGRATO ACQUEDOTTO DEPURAZIONE FOGNATURA) IN COLLABORATION WITH THE PROVINCE OF FERRARA, WITH THE INTENTION OF PROMOTING AWARENESS AND RESPECT FOR WATER RESOURCES.



CODIGORO (FERRARA), LAND RECLAMATION  
AUTHORITY OF THE PLAINS OF FERRARA.  
LORENZO FANTINI, DEPARTMENT HEAD OF  
TECHNOLOGICAL PLANTS, AT THE CONTROL  
PANEL OF THE PUMPS (ON THE LEFT).





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