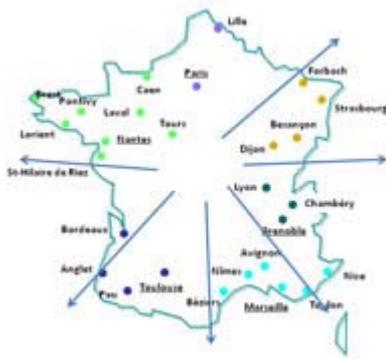


## Editorial



## “ France and International ”

The magnificent book on Sogreah's history that was published at the end of last year proves it in the best possible way: our company's activities in France and abroad are inseparable. They nurture each other. How many projects outside our borders have benefited from technical expertise and solutions initially developed in France? Would a foreign client trust a consultancy firm that was not renowned in its home country? Can a French client ignore the tremendous contribution of experience built up from projects performed all over the world? Our broad portfolio of activities and well-established position on international markets are two of our major assets, especially in these current times of deep economic crisis. This is a source of stability and cohesion for the company: our activities in different fields will not all be hit at the same time and in the same way, and a team spirit can and should take care of the rest. This mutual enrichment also benefits our employees directly. Our French engineers are extremely lucky to have the chance to work on foreign projects. The articles in this newsletter illustrate this point perfectly. Furthermore, thanks to its reputation and international standing, Sogreah offers an extremely attractive working environment for talented men and women from France and further afield.

Our track record of success is largely down to our adaptable resources representing a variety of backgrounds and intersecting cultures.

*Denis Bertel, North East and Centre Branch*

France

“  
Living and working in  
western France

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Might the western region be to France what California is to the United States?

Well, maybe not: palm trees do grow here, though less abundantly, and celebrities keep a much lower profile and there are certainly not as many here as there are in L.A.

Even so, the “West Coast” effect that our region's promoters extol is the reflection of a dynamic economy, even during these times of crisis.

This is the favourable context in which SET PRAUD, a long-standing and almost institutional consultancy in the Nantes region, has grown into the Western France Division that we know today:

- nearly 20% of Sogreah's workforce,
- a dense network of branch offices: Saint Hilaire de Riez, Pontivy, Tours, Lorient, Caen, Brest, Laval,
- and turnover between 15 and 17 million euros.

This excellent development, which has seen our workforce practically quadruple over the past decade, has been driven by the group (personified for many years by Jean-Luc Henry, well-known for his affable personality) but is also down to the talent and enthusiasm of the men and women who work within it.

While its roots lie in engineering, the Western France division has also developed its study skills and now offers a complete range of services covering most of Sogreah's fields, including:

- the region's most “traditional” ones: urban developments and amenities, water and sewerage infrastructure, and civil engineering and offshore structures (thanks to BEST)
- the most “advanced” ones: electricity, automation systems,
- the most “high-tech” ones: treatment of all types of water, including sea water desalination,
- the “greenest” ones: environment and environmental engineering,
- Sogreah's most “conventional” ones: river hydraulics and river development schemes,
- the most “innovative” ones: energy, sustainable development, eco-friendly approach to town planning, etc.

Lastly, since it represents 60% of France's total length of coastline, our region cannot turn its back on the sea. Sogreah's maritime specialists enjoying the healthy sea air in Nantes and Caen have formed a team that enjoys pitting itself against competitors who often envy our skills and resources.

Talking of the sea and oceans, we must not forget our latest branch office to be opened, at Fort-de France in Martinique, proving, as if it were needed, that the West can stretch a long way... westwards, but also... far to the south, to places where palm trees flourish!

*Jean-Michel Blanchais, West Branch*

Morocco

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Tinja

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Morocco has a host of natural assets and a rich, diverse cultural heritage, and has made a strategic decision to promote its tourism sector. In 2001 it instigated an ambitious development programme aiming to increase the country's accommodation capacity from 5 to 10 million beds. The policy has been named “Vision 2010”.

Numerous agreements have been signed between the Moroccan government and national and foreign investors in this framework, to build tourist and residential complexes across the country. Emaar, the United Arab Emirates' leading property investor, has launched the Tinja project on a 300 ha site on the Atlantic coast just to the south of Tangiers. In January 2007, Sogreah was awarded the contract to provide complete design and supervision services for the entire project infrastructure.

The project, with a total constructed floor area of 700,000 m<sup>2</sup>, notably comprises:

- 2 hotels (600 bedrooms),
- 520 detached villas, 735 terraced villas,
- 1300 residential apartments,
- an equestrian centre and four multi-sports centres,
- 45,000 m<sup>2</sup> of retail space,
- a 2 ha man-made lake, a 2 ha landscaped park.

Sogreah is performing the following tasks:

Environmental impact assessment

Engineering:

- general earthworks,
- drinking water supplies and wastewater and stormwater sewerage,
- wastewater treatment and reuse for watering plants
- developments to protect the site against storms and flooding by the wadi
- design of a 2 ha man-made lake
- traffic study, main access roads, main and secondary internal roads
- all cable networks: high current, low current, telecommunications, public lighting
- public area and landscape development project
- supervision of infrastructure works on site

This project involves several Sogreah entities both at head office and across the regions under Urban and Industrial Environment Branch supervision and in close collaboration with Sogreah Maroc in Rabat. The general earthworks and infrastructure for a 50 ha first phase are currently underway.

Thanks to its extensive range of skills, Sogreah is providing its client with a single point of contact for all the technical aspects of the project, which is due to be completed in 2013.

*Samuel Gautier, Sogreah Maroc*



**7th Syntec meetings, cont.:  
staff mobility as a  
development factor**



International development has become a necessity for many companies, and staff mobility is a subject of concern for all consultancies with offices around the world.

Indeed, consultancy is not exported as a product, but rather as the know-how of a firm's personnel, which means that clients must be provided with consultancy services tailored to their individual project sites.

Engineers must therefore be mobile, open-minded and adaptable, and companies must know how to foster this through their recruitment policy and their procedures for managing mobility and professional development.

Syntec Ingénierie, France's largest professional engineering federation, has devoted a great deal of thought to this topic and a working group is considering it at the moment. It is led by Sogreah and includes a number of renowned French players (e.g. Coyne et Bellier, Egis, Coteba and Bertrandt) as well as two young expert witnesses who have worked abroad and are contributing their experiences.

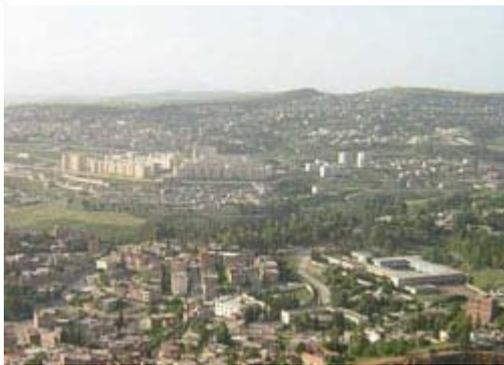
The subjects raised and discussed at the meeting, where audience participation was excellent, were the following:

- Mobility is decreasing among young experts (aged 30-45),
- Periods of secondment should be considered as an integral part of a rewarding career,
- Arrangements should be made to help employees adjust on returning to head office,
- It is important to sustain both technical and social links between head office and subsidiaries. Notion of a worldwide network of interconnected exchanges,
- Specific training and awareness-raising focusing on working abroad should be implemented, especially in schools and through the organisation of intercultural training sessions in companies,
- Mobility resources should gradually be incorporated into management practices,
- Measures to harmonise corporate and tax systems should be supported, so as to simplify both the move to a foreign post and the return home,
- The problem of employment for spouses, in particular finding new ideas to boost spouses' career development

All these topics will be discussed at greater length in liaison with other French and European associations, especially via the EFCA, and extended to include another related subject: hiring foreign employees and integrating them into French groups operating in international markets.

These subjects will continue being developed throughout 2009 and the conclusions reached will be presented at the next international workshop during the forthcoming Syntec Ingénierie meeting, to be held at the CNIT, Paris, on 22 October.

*C. Guillemenot, Human Resources Manager / P-Y Dartout, Vice-President, International Development*



Algeria

### ➤ Constantine drinking water supply phase 2

To meet the request made by Algérienne des Eaux in 2004 to bring to fruition their efforts to improve water distribution throughout Constantine and the surrounding area and reply to the call for tenders for studies and works launched by the Algerian authorities, Sogreah has joined forces with Chinese firm CGC and Société des Eaux de Marseille. Sogreah's assignment under the terms of this contract concerns all the assessments of the drinking water production, transfer, storage and distribution systems and the preparation of a master plan for the five municipalities constituting the Constantine urban area (about 1m inhabitants). The contract, for an initial period of 3 years, ended in early 2009 and involved assessing nearly 800 km of water mains, about 100 km of which were renovated during the rehabilitation works.

*Michel Valin, Urban and Industrial Environment Branch*



Armenia

### ➤ Redevelopment of the Kond neighbourhood of Yerevan

Yerevan city centre was rebuilt at the beginning of the 20th century along a rectangular symmetrical grid and a classical style of architecture that was typical of the regime of that time. Kond, a small hill just to the west of the city centre, escaped being restructured. This 17.6 ha neighbourhood is now little more than a dense, tangled network of narrow alleys between small, run-down houses that are still lived in.

The Kond redevelopment project consists in building an urban centre capable of accommodating 26,000 people including its current residents, on behalf of Yerevan city council. The aim is to complete the project in seven phases spread over a period of about fifteen years. Sogreah is helping Architecture Studio to implement the feasibility and preliminary design studies in fields as varied as geotechnics, the environment, transport, waste management, roads and utilities. The main challenge is to reconcile European standards with Armenian standards.

Sogreah's task is to incorporate sustainable development into the design of this new neighbourhood. Modular reservoirs and treatment plants will be built in order to provide drinking water supplies to residents while respecting the phasing requested by the limited partner. Stormwater from the parking areas will be channelled through hydrocarbon separators before entering the network, which is not yet the case in Armenia. As regards alternative modes of transport, the roads have been designed to facilitate pedestrian movements and the bus network has been redesigned to incorporate the development scheme.

*Corinne Drujon, Urban and Industrial Environment Branch*



Tunisia



France

### ⇒ EI Allef

Sogreah is assisting the General Directorate for Privatisation, which reports to the Tunisian Prime Minister, with a complex transaction concerning a 26-year period comprising the concession of BOOT contracts for the future EI Allef and EI Attar sewage treatment plants as well as the concession of the right to operate two existing treatment plants and another that is currently being built, all located in the Greater Tunis area. The executive agency is the National Sanitation Utility (ONAS). Tendering of prequalified investors is due to take place in early 2009. (In association)

*Pierre Galzin, Urban and Industrial Environment Branch*

### ⇒ MARSEILLE, SOUTH PRADO TUNNEL

The planned 1.5 km long underpass will link the centre of Marseille with the east and west motorways on the city outskirts. The two one-way traffic levels will each have two lanes.

Sogreah has been appointed to perform the hydraulic study of the first outfall and provide design and project supervision services for the network diversion works.

The first outfall (4.70 m high and 4.95 m wide) will drain wastewater and stormwater from an urban catchment area measuring 2000 hectares. It will be affected in two places by the tunnel project. The hydraulic study must prove that the project will not have a significant impact on effluent discharges at Prado beach, flow rates entering the treatment plant or flood risks. All the networks in the area to be occupied by the tunnel must be diverted. However, there will be less than a metre between the tunnel walls and façades for all the networks, so some of them will have to be run temporarily along the façade.

The tunnel is scheduled to open in 2013 and will make Marseille city centre accessible in record time!

*Agnès Cordeau, Marseille Agency*



France

### ↪ Climate change and sustainable management of mountain regions and water resources: what fate for Lake Annecy? (CLIMASILAC II)

The water cycle is closely linked to the climate. Water resource managers are beginning to take into consideration the possible impact of climate change on water resource availability. The CLIMASILAC II research programme, funded by the Institut de la Montagne, focuses on a prospective modelling approach to draw up scenarios reflecting the evolution of Lake Annecy and its catchment area under the two-fold stresses of climate change and human activities. The aim is to develop decision-aid tools to be used by managers in charge of all parts of the drainage network.

*Catherine Freissinet, Urban and Industrial Environment Branch*



Sudan

### ↪ Upper Atbara dams

Following on from feasibility studies performed in the 1960s and 1980s, Sogreah has signed two major contracts to resume the studies of two dams on the river Atbara (a major tributary of the Nile) and an irrigation area measuring about 150,000 ha downstream of these dams.

The purpose of these dams is to supply water to a new irrigation area and support Khashm El Girba, a dam located downstream whose storage capacity has dropped as a result of gradual siltation since it was built and which is used to supply an existing irrigation area.

Two impact assessments, on the dams and the irrigation area, are also in progress.

*Damien Puygrenier / Pierre Cochet / Nicholas Bukowski, Water, Energy and Environment Branch*



Oman

### ↪ Interceptor Guard Dam, Salalah

Oman, along with Yemen, forms the southern end of the Arabian peninsula on the shores of the Indian Ocean. This specific geographical location is characterised by the occurrence of a monsoon (locally known as the "Khareef") and heavy cyclonic rain in the south of the country, in the Dhofar region. Sogreah has drawn up a flood protection plan for Salalah, the capital of Dhofar. The defences mainly consist of an earth dam with a diaphragm wall (6,000 m long, 22 m high, storage of PMF i.e. 77 Mm<sup>3</sup>). After having designed the dam, Sogreah is supervising its construction, which is due to be completed in autumn 2009.

*Luc Bazerque, Sogreah Oman*



France

### ↪ Lurberria flood-control dam, Pyrénées Atlantiques

In the framework of construction of a flood-control dam on behalf of the Nivelle basin district authority, a 1:40 scale model was built at Sogreah's hydraulics laboratory with the aim of finalising operation of the dam's flood spillway and outlet.

This "dry" dam (without a permanent reservoir) represents a maximum surface area of 73 ha and a capacity of 6 hm<sup>3</sup>.

The dam is 22 m high and equipped with:

- a bottom outlet, allowing the passage of fish and normal river flows,
- a narrow intermediate weir to damp flood flows,
- a stepped skimming weir, on either side of the flood-damping weir, limited by training walls,
- a stilling basin downstream of the flood-damping weir.

This composite dam, comprising an earth wall on the right bank and a roller-compacted concrete wall on the left bank, both preserves movements of fish (Atlantic salmon, sea trout, eel, brown trout, lamprey, shad, etc.) and protects the urban areas located downstream.

*Poli Gabriel, Sogreah Agence de Pau*



Albania

#### ⇒ Evaluation of hydropower potential

Sogreah has won the call for tenders launched by KESH, the Albanian national electricity company, concerning the identification and technical, economic, environmental and social evaluation of sites with potential for developing hydropower on three rivers of Albania and their main tributaries: the Black Drin, the Seman and the Vjosa. This study began in August 2008 and will take five months to complete. Albania wishes to restart its hydropower development programme on the basis of this study by granting concessions and, in doing so, find a solution to its chronic energy deficit.

*Xavier Gil / Thierry Bongrand / Jean-Luc Rahuel, Water, Energy and Environment Branch*



France

#### ⇒ New freight terminal - Ajaccio

Freight activities are being transferred to a new terminal on the St Joseph site as part of a general project to restructure Ajaccio Bay that is being managed by the Ajaccio and South Corsica Chamber of Commerce and Industry in association with the Corsican regional authority.

The main priority of the general project is to separate passenger/vehicle traffic from cargo traffic, by developing a specific site for the latter in St Joseph.

Sogreah has been appointed to provide complete design and project supervision services for construction of the new facility, including the preliminary and environmental studies. The new site will include a 215m long open-pile jetty capable of accommodating ferries and an earth platform partially reclaimed from the sea measuring 4 to 5ha, to meet operating and safety requirements.

*Bruno Chaffraix, Maritime Branch*



France

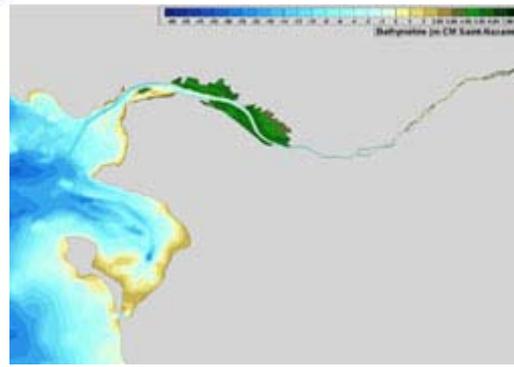
### ⇒ Dunkirk: redevelopment of the methane carrier terminal for EDF/Sofregaz

EDF intends to build and operate a methane carrier terminal in the western outer port of Dunkirk. The estimated cost of this terminal, which will have a capacity of 9 to 10 billion cubic metres per year, is a billion euros, 100 to 150 million of which will be borne by the Port of Dunkirk authority (GPMD). This facility alone is likely to generate annual traffic of 4 to 5 million tonnes (Dunkirk, France's third largest port, draws in annual traffic in excess of 57 million tonnes per year).

In the framework of this project, GPMD appointed Sogreah to perform all the hydraulic (currents, waves, wave disturbance), hydrosedimentary, traffic simulation, nautical risk, navigation and mooring studies, and assess the feasibility of the protecting structures and the dispersion of materials dredged from the future methane carrier terminal.

EDF/SOFREGAZ has also asked Sogreah to perform the conceptual studies of the water intake and outfall and the unloading wharf, and to prepare tender documents for and manage the EPC contracts for these aspects.

*Pierre-François Demenet, Maritime Branch*



France

### ⇒ Development and exploitation of a three-dimensional hydro-sedimentary model of the Loire estuary

Part of the river management project entitled "Plan Loire Grandeur Nature 2007-2013" is to continue the programme to restore the hydrosedimentary dynamics of the Loire estuary in the form of pre-operational studies and experiments involving works costing 25 million euros. In this context, GIP Loire Estuaire, a public interest group, has appointed Sogreah to perform a study with the main aim of developing and exploiting a three-dimensional hydrosedimentary model of the Loire estuary (lot 1), defining and evaluating the experimental tranche (lot 2) and updating the general estuary development scenario (lot 3). This modelling work follows on from and draws on the conclusions of the downstream prospective studies (2001-2007), in which Sogreah participated. Further measurement campaigns put together on the basis of previous experience are also in progress or planned in order to feed further data into the model. Some aspects of this model will constitute major innovations in deepening our understanding of the hydrosedimentary mechanisms called into play in the estuary.

*Luc Hamm, Maritime Branch*



France

#### ⇒ Hydraulic development works on the Cadereau d'Alès (Nîmes)

The exceptional rainfall event of 3 October 1988, which killed nine people and caused damage costing 610 million euros, was the trigger for an ambitious flood control programme.

Having built flood damping basins upstream and drainage ditches downstream, and following further floods in 2005, the city council undertook works to develop the cadereaux (a local word for streams) located in dense urban areas through the Flood Action and Prevention Programme.

The works forming part of the first large-scale operation consist in fitting box culverts measuring about 6m x 3m in built-up areas that will be capable of conveying flows of up to 100 m<sup>3</sup>/s, at a cost of 25 million euros.

Sogreah's assignment is to provide design and project supervision services in a consortium with BRL. During the design phase we are responsible for the hydraulic studies (dimensional and conceptual designs of specific structures), notably including two physical scale models, and coordinating the network diversion works.

The works are scheduled to take place between 2009 and 2011.

*Laurent Polly, Mediterranean Branch*



Morocco

#### ⇒ Rabat Tramway

The Rabat-Salé urban area is being profoundly restructured and the authorities have undertaken large-scale works to construct the tramway that will link the two cities, which are separated by Wadi Bouregreg. Two lines will be operational at the end of 2010 covering a total length of 17 km.

Sogreah Maroc is currently conducting the working design studies for the earthworks for the two lines on behalf of GTR (Colas' Moroccan subsidiary), the firm awarded the works contracts. Our assignment entails producing not just earthwork drawings, but also drawings relating to the main cable duct, road drainage and track bed surfacing.

These services are being provided in collaboration with our Nantes and Marseille branch offices, which have had 2 or 3 technicians placed at Rabat's disposal since July 2007. These working design studies will be completed at the end of March 2009.

*Samuel Gautier, Sogreah Maroc*



- ➔ The Sogreah Foundation is in Congo in the framework of technical assistance with the inventory and maintenance of water intakes for village water pillars in collaboration with the Isère Kivu Exchange Committee (a non-profit association).  
Nicolas Conq and Thibaut Le Loc'h (Sogreah Nantes) carried out an assignment in August 2008



- ➔ Pollutec, Lyon  
2 to 5 December 2008  
Contact: P. Bollaert



- ➔ Sogreah ranked among the world's top 5 maritime engineering firms! The latest listing drawn up by ENR (Engineering News Record), based on 2007 turnover, was published at the end of December. Sogreah has moved up two places in the listing of global engineering firms specialising in maritime studies.  
Contact: A. Deforche



- ➔ Salon des Maires et des collectivités locales (exhibition dedicated to mayors and local authorities)  
25 to 27 November 2008  
Contacts: M. Fons, M. Giroussens



- ➔ Delegation of French business leaders visiting Libya with Medef International, and inauguration of the restored mausoleum at Leptis Magna  
7 to 10 February 2009  
Contact : P-Y Dartout



- ➔ World Water Forum, Istanbul  
16 to 22 March 2009  
Contacts : P-Y Dartout, D. Nedialkova
- ➔ Salon Ports de Plaisance et Développement Durable, Arcachon (marinas and sustainable development)  
18 and 19 March 2009  
Contact : B. Loizeau
- ➔ Pollutec Algiers  
15 to 18 June 2009  
Contact : Sogreah Algérie



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