

L'Ambassade de l'eau



Guide

STRATEAU

Decision support tool



www.strateau.net



Mediterranean Union
of Young Water Ambassadors

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Water and the Mediterranean basin



In accordance with its etymology, the Mediterranean (or *medius terrae*) is located in the middle of the lands. The Strait of Gibraltar (natural opening to the west), and the Suez Canal (artificial opening to the east) are the Mediterranean's only openings to the outside. Its coasts stretch out to 46,000 km and are shared by 22 countries whose populations put together reach more than 400 million inhabitants.

In 2005, the "water poor" Mediterranean population - i.e. those who live with less than 1,000 cubic meters of water per annum and per capita - rose to 180 million people, hence almost a quarter of the population of the member countries of Union for the Mediterranean. Among them, 60 million were in a water shortage situation (less than 500 cubic meters of water per year).

The Mediterranean Sea has become a keystone in the stability of the Mediterranean basin. Being at the heart of major trading and an increasing flow of tourists, the Mediterranean is subject to pollution due to human activities which threatens its biodiversity. This pollution, which is mainly due to the riparian countries' faulty sanitation networks, clearly makes access to water difficult for the populations.

Union for the Mediterranean (UfM)



The UfM is a multilateral partnership that encompasses 43 countries from Europe and the Mediterranean Basin: the 27 member states of the European Union and 16 Mediterranean partner countries from North Africa (Algeria, Morocco, Tunisia) , the Middle East (Egypt, Lebanon, the Palestinian Authority, Syria, Jordan, Israel, Mauritania, the Arab League, Turkey and the Balkans (Albania, Croatia, Bosnia-Herzegovina Montenegro). It was created in July 2008 as a reinitiated Euro-Mediterranean Partnership (the Barcelona Process), **by French President Nicolas Sarkozy**. The Union has the aim of promoting stability and prosperity throughout the Mediterranean region.

With its headquarters in Barcelona, the Union for the Mediterranean is the southern regional cooperation branch of the European Neighbourhood Policy. Its eastern counterpart is the Eastern Partnership.

In November 2008 identified six major projects that target specific needs of the Euro-Mediterranean regions among them the de-pollution of the Mediterranean

STRATEAU, user's guide

**Strategic analysis tool and prospective
for the balance demand/water resources**



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Summary

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STRATEAU a strategic analysis tool and prospective for the balance demand/water resources (STRATEAU) to be deployed in the countries of the Mediterranean.

The goal of this tool is to provide to the regional actors a decision support for public policies in water management. It is therefore a tool for decision support designed to improve the choice of political strategy related to Water Demand management (WDM) or to the impacts of the water supply.

STRATEAU is developed to quantify the demand and the water resources of a territory. Thus, the users of the tool will:

- Define the location of the pressure on water resources. The tool allows identifying during which period of the year and in which location of the territory the imbalance supply/demand takes place.
- Get a decision support. The tool provides a detailed use of the resources in order to clarify the different usage of water. Territorial strategies for water management could appear from the clarification of pattern use. The implementation of scenarios allows the modeling of a development policy on the balance between water supply and demand.



- Develop strategies to anticipate. It will be possible to study the impact of the future weather trends through the implementation of scenarios. This will include action plans in order to avoid conflicts.

However it is important to understand that STRATEAU does not constitute an automatic scenario since the prospective scenario will be generated by using data entered by the user.

On the other hand, STRATEAU does not allow the calculation of virtual water. It provides information required for its calculation but it does not incorporate in the reconstitution of virtual water as in the food chains.

Finally, it is not a tool for hydrological components of groundwater and rivers but it is a strategic and analysis tool for the water balance supply / demand across a territory scale.



Strategic analysis tool and prospective for the balance demand/water resources

What is this?

STRATEAU is a strategic analysis tool for the balance demand/water resources across a territory. It is a "calculation box" for regional and local actors who used to have an inventory of water demand of their territories.

Water demands are taken into account the following sectors:

- Agriculture
- Energy
- Residential
- Tertiary
- Industry
- Environment (forest, moors,...)

For each sector, the results (sampling and water consumption) are generated according to a data base - the determinants of activities - which describe the demographical characteristics, economical, social, etc of the territory. These determinants allow analyzing in detail the sources of sampling and consumption taking into account the details of the territory, the structure of the current economy, the population and the territory.

The main methodological principles

The tool has been designed to meet specific methodological principles. They are shown below in order to inform the user on the methodology and to understand better the results proposed by the tool. A more detailed methodology document is available.

The Homogeneity

The model was created in a way to obtain the indicators concerning water demand no matter what is the level of user's information.

Thus, STRATEAU is directed more to achieve final given data (local level) than the aggregated data at national scale.

France, as an example where these data are available, the needs and consumptions are estimated according to the given activities (population census, agricultural statistics, employment, etc.) being available as a whole in all countries at the local level for the year 2006.

This spatiotemporal homogeneity guarantees the unit and coherence of the results and allows the establishment of an updated, relatively simple procedure.

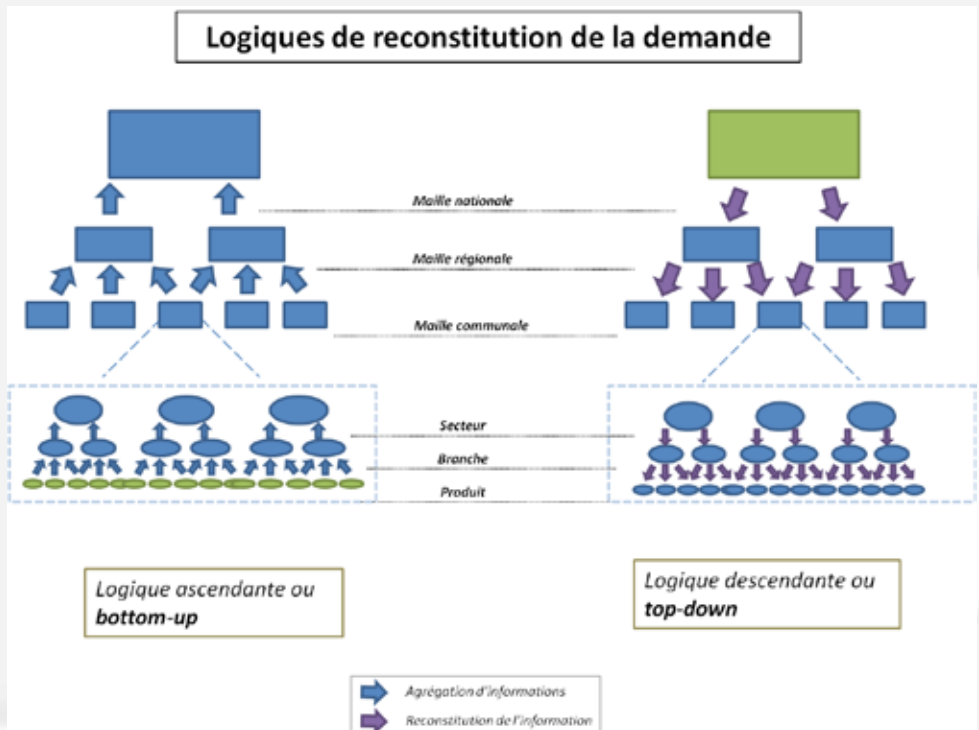
Everyone respects the homogeneity principle; the tool has been designed in a way that might put in evidence the local specificities:

- A systematically privileging type of approach “bottom up” of reconstitution of the water demand (according to the given data of activity), permitting the study of the consumption mechanisms and to put the peculiarities of every territory according to regional and national means;
- Keeping the possibility where the administrator might substitutes partially the data for more local sources especially for the hypothesis concerning the equipments rates for example.



The additives permit the reconstitution of withdrawals and the global consumption of a territory aggregating the withdrawals and the consumption of all infraterritories (spatiotemporal homogeneity is primordial). Also, the structure of the common local scale permits the extraction of a statement to all the required territory scales.

This methodological choice shows a big interest in the frame of the regional water strategy and/or departmental. This will equally permit to develop the contribution in the territories in order to achieve the regional objectives.

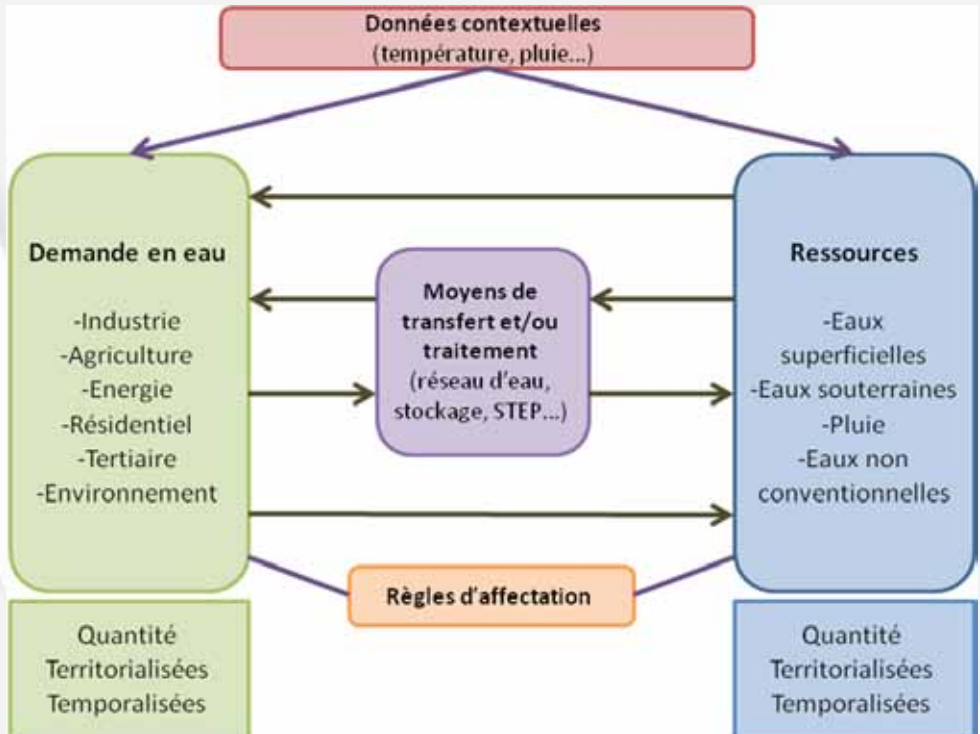


The Allocation Rules

The allocation rules are the most important parameters in order to calculate demands / territory water resources. In fact, such rules permit to make a link between the demand and resources (which demand will have impact on which resource? the same goes for dismissing) thus re-transcribing the considered territory.

This also permits to shed the light on the water stress territories where the demand of water is ensured by the neighboring territories. This might be important information for the local and/or regional managers.

Figure : global summary of methodological scheme in a simple illustration for the existing relations between demands and water resources.





Usage limits and precautions

This tool has been designed to elaborate a strategy for water management demand locally and globally. The results are the suitable data modeling which refer to certain precautions.

Which data for which sort of usage?

The good usage of data is an essential element to understand the STRATEAU results. Nevertheless, it is important to distinguish the different types of the modeling data and their respective usages. We distinguish the following:

- **The data modeling:** it deals with the calculated data based on statistical data. We can also regroup under this typology the industrial productions, tourists' number, the reconstituted flows of the rivers... they all aim to describe the best mechanisms for water demand and the territorial issues. These data permit to animate the debate, to stimulate the reflections and mostly to adjust the strategic decisions and putting in evidence the issues and priority targets. This based on the present data which makes it possible to define the long term strategic objectives of the territory. We are not searching here for the accuracy of the used data, but rather for a precise description of the mechanisms driving to water consumption.

- **Data timing:** these are the real quantitative data which are implemented in the model for timing thus being so close to reality.
- **Prospective data:** these are the data which the user would implement in order to see the diverse scenarios in the statement demand /water resource. Nevertheless, it would be better to pay attention for the model exits at a prospective evaluation: it is not enough to change a single parameter in order to describe a future situation, but it should be based on full knowledge of modified data.

It is essential to distinguish these different typologies data and to limit the usage of each one according to their relevant areas. The precision and accuracy requirements vary for each of these data types.

The data provided by the tool are the data modeling where uncertainty may sometimes increase, but offering a clear vision of the emission mechanisms.

Threshold Representation

Thus, like all the modeling exercise, the data base may present uncertainty following the sectors. It is important to systematically maintain the sense upon using the provided data.

It is extremely difficult to deploy a methodology in order to describe the quantitative state of applicable water resources in all the rivers or in the slopes of the territory (a number of parameters is necessary, punctual and local studies are very efficient).

Nevertheless, the chosen method by the Steering Committee* of the tool, proposes a simple evaluation of the available water quantities and their variations.

The obtained results are rather to be considered as inter-yearly or inter-monthly which are as the absolute valuable results. They permit to see if the resource is in equilibrium, in the exhaustion phase or in the recharging phase.

It's very important to be aware of the limits of this model concerning "supply" part of water, and not to commit the mistake of taking the absolute values of the flows or of the water storage in the aquifers in order to describe the reality.



(to be defined subsequently by the regional partners)

The tool, a property of water embassy, will be available in territories and for national and local actors, according to the conditions which remain to be accurate.

The data base is being taken for the moment at the service provider.

Those who wish to use the data base must ask the administrator. As a result, they will receive a username and a password, which allowing them to access to one or several territories via internet according to their profile.

Once the access is done, the group or territory can access to the concerned data of the territory via website:

<http://www.strateau.net>

General informations

ambassadedeleau@orange.fr

The function and utilization of the site are detailed by the following.

The website address permits the accessing to STRATEAU is the following:

<http://www.strateau.net>

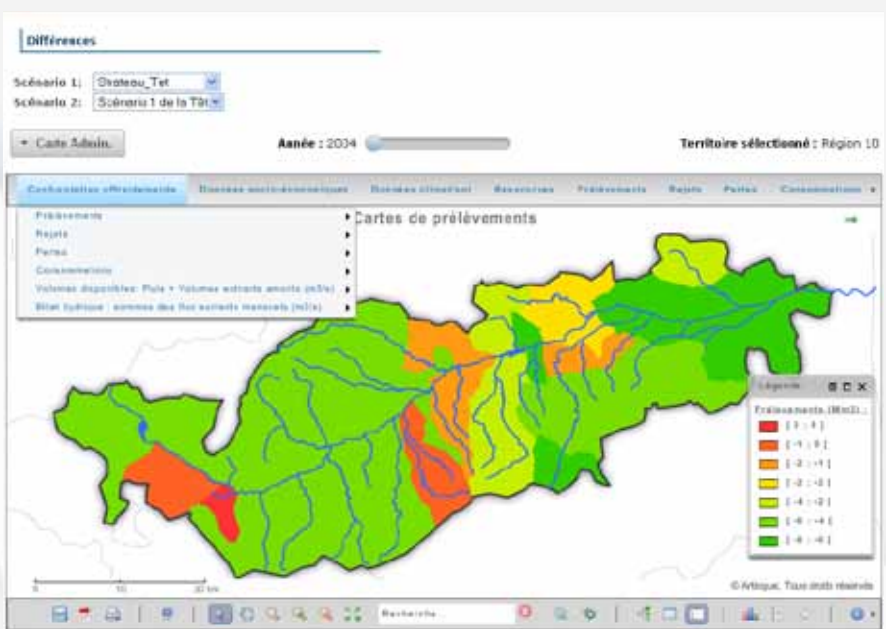
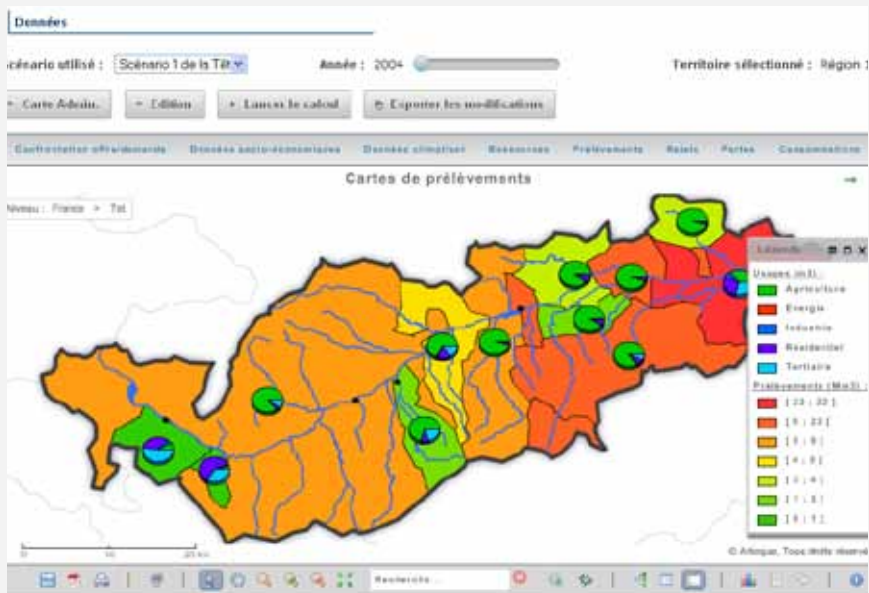
After writing your user name and your password, you access to the home page of STRATEAU. It presents the possible offers by the tool.

The results of the tool are available in several ways and forms:

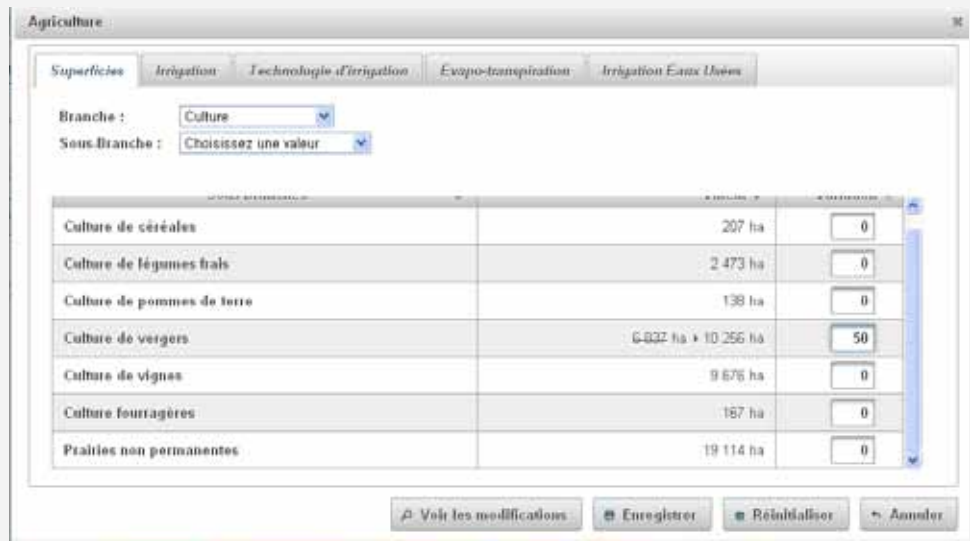
The first and the very simple one, is presented as an Excel file downloadable from the website and illustrating the principal information regarding the selected territory.

The second, necessitates programming knowledge, is done via applications of ORACLE data base.





Window of configuration of scenarios



The tab "Outils" gives access to the page where you can modify fine data on the deliberate territory. These data have to be loaded in format CSV by following the present method on the page. This tab also gives access to the extractions Excel.

Finally, in the tab "Aide" are proposed this user guide as well as the methodological note allowing to understand more in depth the methods used by STRATEAU.

Downloadable Excel File

This format output xls is decomposed into several tabs:

- **"Summary"**, presented as a table of contents reorienting the users towards the tabs they wish to access;
- **"Global statement"**, synthesizing the main information of territory to be read as a summary.
- **"Withdrawals and deposits"**, illustrated in a scheme and table form and schemes the route of the big water mass.
- **"Demands"**, there is a tab by demand, each presenting at first time the selected entry determinants and then illustrating withdrawals and consumptions on monthly basis with high quality.
- **"Offers"**, illustrating the pressures practiced on the different resources
- **"Offers/demands adequacy"**, synthesizing under a graphic form the relations between the resources and the demands.

This output form, through the territorial study, generates synthesized data tables, usually accompanied by diagrams, facilitating the visualization and the rapid understanding.

Extremely rich and flexible, it permits the user to select the most pertinent data or to aggregate those which are at least in a territory or which he wishes to put in evidence.

In addition to this, the user can, according to the spreadsheet functions, choose the best mode of representation (histogram, camembert ...) since the source data of every graph is available in a table form.

Finally, in order to provide the elements analysis, certain tables and graphs offer the possibility to compare the obtained results of the territory studied to those of the completed hydrographic basin.

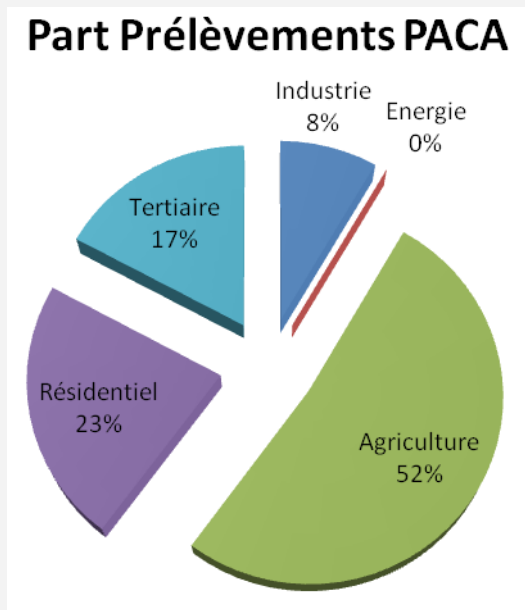


Illustration of available outputs in Excel-Global (1)

Global graphs on water demand in the studied territory (withdrawals, deposits, water consumptions) will be accessible in the tab "Global Statement" in the downloadable Excel file.

This type of graphic permits to have a complete vision of water needs of the territory by sector known by water actors.

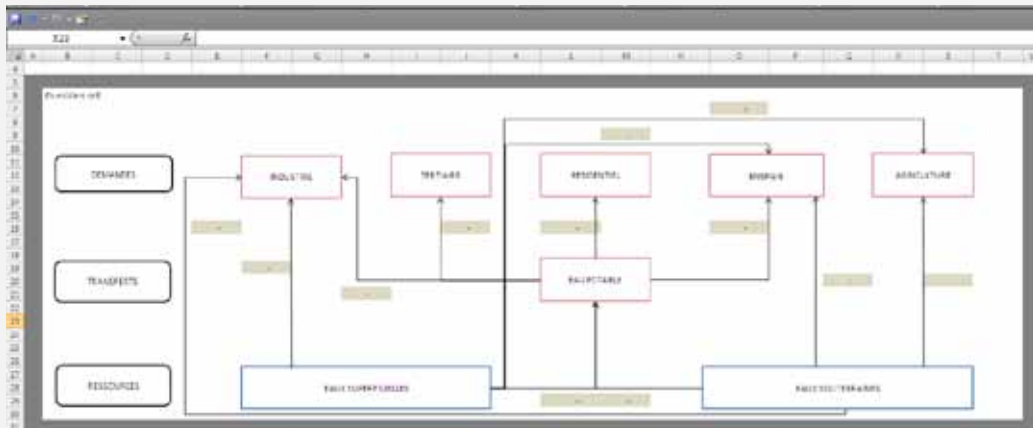


Illustration of the available outputs in Excel- withdrawals (2)

This type of output is very interesting in order to understand the relations between the resources and the different types of water demand (via transfer like the potable water network or also the STEP). Two graphics of this type are presented in the output file: one for the withdrawals and another for the deposits.

Afterwards, each water demand sector will have a tab dedicated to focus on the characteristics of the studied territory compared to the hydrographic basin.

For example, for the agriculture and the industry:



Illustration of available outputs in Excel- Agriculture (3)



Illustration of available outputs in Excel- Industry (4)

In these sectorial tabs, a good description of each water demand sector is proposed to show the different actions of the makers.

Finally, the tabs according to the resource type (surface water, groundwater, non conventional) are present. As mentioned before, the interesting issue in these results is in the temporal variation of available water quantities.

The graphs permit to put the water demand in front of the corresponding resource and to check as well if the demand exceeds or not the renewable water resource of the chosen year.



Context

The mediterranean area several countries in high water stress

- 60% of the world's « water poor » (less than 1000 m³/inhab/yr)
- 20 million Mediterraneans have no access to drinking water (south and east)
- The aim is to increase the added value per cubic meter of water used in these countries

Water management issues

- Climate change will increase the water stress (mainly during summer)
- Development of tourism and/or increase of the population
- Enhance of agricultural production
- Safety of water cooling for electric production plants
- Desalination

Running of the model

Methodology and scales

- Data collection : UMJAE (Mediterranean Union Youth Ambassador of Water) which are students from several science schools
- Scales : 4 spatial scales and monthly results. Several kind of users identified.
- Implementation of data : data and SIG maps formating, calculation
- Methodology : bottom-up for water demand reconstruction (calculation of the demand from the water use, for all water uses), mass balance for the resources

Inputs and outputs

- STRATEAU inputs : socio-economic (population, employment, crops areas...), meteorological (rainfall, temperature, ET0...), hydrological and SIG data => easy gathering data
- STRATEAU outputs : SIG, grids and graphics about water demand, water resources and the balance between them. Export in Excel format. User friendly interface.
- Data is stored on a server and the tool is 100% online (access all over the world)

Results provided by the tool

Water demand

- Reconstruction of water demand , withdrawals and consumptions for the following uses : Agriculture, Domestic, Industries, Electric production plants (cooling), Service Sector and Environment (Forests, river reserved flows)
- Reconstruction of the losses and discharges for each of these uses
- Based on socio economic data (easy to gather) such as demography, employment, crop areas...
- Allocation rules in order to associate water demand and water resources

Water resources

- Rainfall is provided by the user - River flows calculation of the rivers on the studied area (based on the existing hydrological data)
- Calculation of the annual volume variation of the groundwater bodies
- Evaluation of water transfers between several water basins
- The dams are simulated, impact on the rivers flows is estimated
- Impact of the creation of water desalination plants can be assessed

Scenarios of evolution

- Results of socio economic and climatic scenarios can be the inputs of a STRATEAU scenario
- Plenty of potential actions regarding water demand : technology, development orientations, pedagogy...
- Potential actions regarding the water resources : transfers, desalination, dams...
 - > Friendly user scenario module

Test areas

Al-Auja area (Palestine)

- Issues : Al-Auja is a small town north of Jericho. There is high water stress due to several reasons. High drought is responsible for the lack of water in the river (during six months). Drinking water adduction and agriculture are the main issues of this area.
- Mid-term scenario : The economic development of Jericho may have impacts on Al-Auja city. People may come to live in Al-Auja and agriculture will expand. Climate change is taken into account.

Khemisset province (Morocco)

- Issues : Khemisset province is located between the Bouregreg/Chaouia watershed and the Sebou watershed. There is a high pressure on water resources (2/3 of surface water is already used). Increasing drinking water demand means new sustainable resources.
- Mid-term scenario : according to the « Green Morocco Plan », the agriculture will be developed towards specific crops (cereals...). Changes in the irrigation technology (80% drip irrigation for orchards and citrus fruits). Climate change is taken into account.

Têt watershed (France)

- Issues : agricultural area (orchards) with a ski resort upstream in the basin : agricultural and tourism water needs are provided but several small areas are in high water stress (especially during dry years). The tool is wedged on Water Agencies data.
- Mid-term scenario : drip irrigation for orchards (peach trees) and increase of the tourism during summer. (+20%)
Population evolution (+19%, OMPHALE) and climate change have also been taken into account in this case.

The detailed poster is available at:

www.ambassade-eau.com/STRATEAU



STRATEAU has succeeded utterly at the meeting in Marrakech

The first Mediterranean Water Forum was held in Marrakech on last December 19 and 20. The elite of officials and experts have met there to win the point of the situation in our Big Blue, as well as of the water situation in their respective countries.

The Water Embassy has organized a presentation of the project STRATEAU in connection with the Mediterranean Union of Youth Ambassadors for Water. During the forum, demonstrations and initiations to its use have followed on its stand,

The strength of our presence was our session "Workshop and Round Table" in the plenary hall "Ambassadors" on December 19, at 18:30. We had known that our tool for decision making support is exceptional, it was a delight to measure the quality and enthusiasm of the Palestinian, Moroccan and French technicians, who had exposed to us scenarios developed in their respective territories.

Arbitrations offered by Strateau on a basin in Constraint: A change in farming practices to absorb population and touristic pressures
M.Luc Herrouin, Water Agency Rhône-Mediterranean – Corse

Speakers of high quality, have shown to us the way to prepare the ground for a decision by changing?? Specific data peculiar to respond to questions asked by the decision makers.

You can read the words of Mr. Shaddad Al Attili, Minister of Water of the Palestinian Authority -PWA who chaired the meeting. He made a vibrant plea for STRATEAU. Dr. Fadi Comair, General Director at the Ministry of Energy and Water in Lebanon, could not attend the forum held there by the presence of an official delegation. He had sent a letter to notify us of his absence, in which he reiterates his support and that of the Minister to the project.

M. Gilles Pennequin, Head of the Territorial Development and Deputy Head of the Sustainable Development - Union Mission for the Mediterranean-Presidency of the Republic, has stressed the importance and value of such a tool for the Mediterranean Basin.

Mr. Rafiq Hussein Deputy Secretary General of the Union for the Mediterranean has assured us that after having measured the excitement provoked by this tool, its performance and specificity are the best assets to meet the demand and help for the decision making. He is attentive to the remarks of the teams that already use it; he stressed that if the implementations of the Palestinian, Moroccan and French territories are convincing, STRATEAU will have every chance of becoming the tool of the Mediterranean Basin.

All this strongly encourages us to continue our efforts to make our tool live and grow. The next step has been announced by Mr. André Flajolet, Commissioner of the French Government for Marseille Forum: This will be then the World Water Forum which will be held in Marseille from March 12 to 17, 2012. The success in Marrakech allows us to think that STRATEAU will continue its expansion, for the greater interest of the communities that use it, and those who will discover.

Speech of Gilles Pennequin- Cellule UpM- France

I am particularly pleased that the presentation of STRATEAU can be made here in the first Mediterranean Water Forum being held in Marrakech, because this tool is intended to be yours, to be the tool for Decision making needed by all countries of the southern shore of the Mediterranean, because they will experience unprecedented demographic, urban, economic and social growth; and the factor potentially limiting this growth – for which all are calling - will undoubtedly be the water. The Heads of State and Government meeting in Paris on July 13, 2008 did not make any mistake since they have included, in the Paris Declaration, the founding act of the Union for the Mediterranean, water as one of the main priorities for action.

Already, many territories are facing a serious shortage of water and this shortage is expected to get worse, unfortunately due to a request which will be increasing, and because, at the same time, the water supply is decreasing due to particular global warming.

STRATEAU has been designed and implemented by the Embassy of water - I want to thank once again Jeannette Prétot the President, without whom nothing would have been possible, with the ambition to create and develop a tool easy to use for national and territorial decision-makers who could present, ex-ante, in space and in time the supply balance and demand for water. The order made to Energy Tomorrow has aimed therefore at deepening this particular and potential demand for water through an ascendant approach "Bottom up" on a territorial variable that will go from the hydrographic basin to the town and cross the request with water available in the same territory.

The issue is whether a given area can have a development strategy consistent with its water constraint. In the event that the demand would exceed supply, the land would then be forced to make trade-offs between the search for a new supply of water (use of desalination, reuse of gray water, transfer of inter-basin water, recovery of freshwater outbreaks at sea, etc ...) and / or play on the water demand (changes in agricultural practices, for example, by changing irrigation technology, developing new species or varieties less consuming in water, etc. ..), or even force the touristic or industrial activity to save or recycle water.

Thanks to Energy Tomorrow, it will soon be possible to couple the analysis supply / water demand with energy consumption (and the production of carbon) that it implies. Similarly, it will be possible to integrate economic and jobs criteria that will facilitate trade-offs regarding the territorial strategy of the water under the value-added economic activities that require a use of water.

The profound vocation of STRATEAU is to be the first regional planning tool for decision makers that present, ex-ante, the planning options in terms of an efficient use of water in time. This is to make STRATEAU, with you, an effective tool for economic, social and environmental development of a territory, depending on its water constraint.

So I would like to thank everyone who has so far funded the creation of this modeling tool, unique in its ambition. I have the pleasure to especially thank Pascal Bertaud, deputy director of Nathalie Kosciusko-Morizet who has participated from the beginning to build this tool, but also the French basin agencies that have tested STRATEAU, and finally Dr. Fadi Comair who has provided financial and technical support to test the tool STRATEAU on a Lebanese basin.

I also wish to thank the Moroccan and Palestinian authorities who have implemented STRATEAU with the help of young water ambassadors, mobilized by Jeannette Pretot.

I wish long life to the Embassy of the water and to the tool STRATEAU it carries. I hope that this modeling tool can be valued as it should be at the World Water Forum in Marseille in March 2012, because I am convinced that it fills a gap in the knowledge of the territories in the implementation of policies for sustainable territorial development.

Thank you.

Gilles Pennequin

Speech of Jeannette PRETOT – Water Embassy

I wish, in the preamble, to thank the organizers for allowing us to present at this prestigious assembly the projects of the Embassy of Water and particularly STRATEAU project.

Dr. Fadi Comair, director of water and power resources in Lebanon, was unable to attend and could not be with us. He called me today to confirm again the strong support of Lebanon to the Mediterranean Union of the Ambassador of Water Youth and deployment of the tool STRATEAU

STRATEAU is a tool for decision making support achieved with the support initially of four Mediterranean countries: France, Italy, Lebanon and Morocco. It has been designed to allow local actors to define their territorial strategies depending on the area of water constraint. We have presented same at the Ministerial Meeting on Water UfM in Barcelona in April 2010.

Strateau has benefited from a public / private funding. Our current donors are the six French Water Agencies, the National Water and aquatic environments and two private companies: Veolia and Suez.

All these professionals of the Water Management in France have supported our tool. They have helped same not only financially but also technically: in fact, for two years, they participate in steering technique with the provider and the Embassy of the water. Their commitment is born of their belief: they know that STRATEAU is a tool for decision making support for territorial policy makers, an easy tool to use, as well as an awareness tool for the development of quantitative sustainable management water resources.

I'll tell you about the birth of the UMJAE, the Union of Youth Ambassadors for Water. In 2008, we have made Mediterranean water classes in xx countries; university students, especially students of engineering schools, have established an inventory of more than a suggestion of good water governance in their country. They then proposed a field action in relation to the Mediterranean Sea. The presence of an elected and a professor has guaranteed the quality of these assessments as well as proposals for action on the ground.

Since the Appeal launched at the recent Istanbul World Water Forum, six sub-projects of the UMJAE have been submitted to the Union for the Mediterranean

(UpM): Project 1 of Deir El Ahmar in Lebanon (fight against the rural exodus) Project 2 of Sfax in Tunisia (enhancement of gray water); Project 3 in Casablanca, Morocco (sanitation in rural areas); Project 4 Gaza 1 (discharge diagnosis in the Mediterranean); Project 5 Gaza 2 (public education to improve sanitation). STRATEAU throughout this study has proven to be the link between all the JAE of the Mediterranean basin.

The Water Embassy, in collaboration with its academic partners and the Mediterranean Network of Engineering Schools (RMEI) has set a clear goal: that our Youth Ambassadors for Water, in the course of their studies, work in pairs (Engineers South Med with those of the North-Med) to collect the technical data of each Mediterranean country, and that this work be accomplished with the approval of the competent ministry of the concerned countries.

Last July, our Youth Ambassadors for Water have collected the basin's data of Nahr el Kaleb. They applied the method. And they were able to help local authorities to become aware of the need for a precise description of their territory: geographic, economic and human development. This experience has enabled to measure the need for a systematic approach in the countries of the southern Mediterranean. (In the northern countries, the European Framework Directive takes this role to perfection.). With STRATEAU, it was shown that a junior, faced with the reality of the issue of water, is able to provide work of a senior.

Momentum for the long term

The Embassy of Water has been formed from the essential principle of long-term action. Since its launch in March 2009 at the World Water Forum in Istanbul, The UMJAE is carried by the same requirement. The movement is already running and it will grow from the UMJAE. We are moving and we continue to strive to achieve our six Mediterranean projects already selected by the UpM, STRATEAU. This tool is the property of the Embassy of the water; we put it freely at the disposal of all the Mediterranean countries in order to serve the Water Strategy. We will continue to promote STRATEAU throughout the Mediterranean and beyond. Several ministers and experts from South Med. responsible for water management assured us of their support, whether in Lebanon, Jordan, Morocco, Palestine ... I would like to thank the Minister of Water in the Palestinian Authority, His Excellency Dr. Shaddad Attili: together, we have developed an action plan to carry out our projects in Palestine. Ms. BEESAN Shounar, engineer, was responsible for coordinating STRATEAU and the two projects of the UMJAE in Gaza. In the other Mediterranean countries, we will continue to work towards the realization of the UMJAE projects.

As for the educational component, I invite you to visit us on our Stand, just in front of the stairs : you will discover the presentations of the JAE coordinators of the UMJAE and STRATEAU.

Since 2009 as it did before, and as it will do later, the Water Embassy has played its role as a link between water professionals and young people who soon will join them in the active life. Also a link between the Youth of the Mediterranean countries: beyond misunderstandings and, disagreements between governments, we prove every time that young people want to move together because they know that water is shared. We believe in them and, even, we wonder if they sometimes are not wiser than us.

Because I am a citizen of both worlds, the East and West, because I am President of an NGO in the service of the decentralized Cooperation, I am more than aware of the issues of good governance and respect for rights and duties of citizens vis-à-vis this vital element. This is precisely why I care about the success of the Union for the Mediterranean and the success of its Water strategy. I claim as many of us my emotional and cultural affiliation to this region, and my fondest dream is to be able one day to respond to the question: What nationality are you? I AM Mediterranean and that this response is sufficient.

I give the word to the Palestinian, Moroccan and French technicians, for the demonstration of the use of STRATEAU.

THE ISTANBUL CALL

MEDITERRANEAN UNION OF YOUNG WATER AMBASSADORS



We, the Mediterranean Young Water Ambassadors, assembled at the 5th World Water Forum in Istanbul,

Union

United by the desire to take up the challenge of the preservation of water resources, a symbol and source of life, we mean to get involved in the integrated management of this resource, in researches and in field experiments.

Mediterranean

We, Algerians, Egyptians, French, Italians, Lebanese, Moroccans, Palestinians, Spanish, Syrians and Tunisians, thanks to our diversity, are building together a federative network of ideas and skills in order to contribute to solve water problems around the Mediterranean Sea.

Young

Students, engineers, researchers but above all citizens, we want to develop an education and research strategy adapted to the reality of each country.

Ambassadors

Federated within the Water Embassy, along with the Mediterranean Network of Engineering Schools, associated universities, local authorities and experts of our countries, we aspire to promote concrete technical projects as well as awareness and educational campaigns about

Water

(...)

Considering that this experience shows the relevance of cooperation between students, teachers, engineers and local elected officials of Mediterranean countries within the Water Embassy.

(...)

We call on

- project managers of the Mediterranean Region to join us to extend our action and contact the Water Embassy;
- national and local governments, regional and international organisations, to support us:
 - so that our projects can be quickly implemented with the help of their knowledge, experience, advice and financing;
 - so that this type of partnership actions can be sustainably promoted, by associating the Water Embassy with the Union for the Mediterranean.

Paris declaration

February 9th, 2011



On 9 February 2011 at the Paris meeting : Elected officials, officials of political authorities, major players in the water policy, joined with the Young Water Ambassadors and their teachers requested the initiation of concrete projects development. The contribution of youth will be at the highest ambitions and hopes defended by the Union for the Mediterranean.

The Mediterranean youth believes in a harmonious development of the Mediterranean region. This requires youth contribution with enthusiasm urging to put a lot of effort, to realize and advance projects on the ground. As a matter of fact, the hope is that elected officials, teachers and students of the Mediterranean region, would unite around the Water Embassy under the "Union Mediterranean of Young Water Ambassadors", to utilize the good will and all means of effective actions.

We:

Representatives of the General Secretariat of the Union for the Mediterranean

Representatives of the Water Ministries,

Agency representatives basin,

Representatives of NGO partners UMJAE. REMI officials and independent universities partners UMJAE.

Representatives of financial institutions.

Considering that each pilot water class held in our countries brought about concrete results presented at the Istanbul World Water Forum;

Considering that this experience proves the relevance of cooperation among students, professors, government officials, engineers and elected representatives of the Mediterranean countries within the Water Embassy;

Considering that some projects are achievable immediately, for example :

- **Casablanca** : LYDEC, DEA, Hydraulic Basin Agency of Bouregreg and Chaouia, rural commune of Dar Bouazza, ONEP Area Association Starting Point (ESPOD), Department of Environment, Ministry of Health, Region of Great Casablanca urban commune Casablanca.
- **Sfax** : National Sanitation Office (ONAS), Regional Centre of Agricultural Development of Sfax (CRDA), Department of Hygiene of Sfax, National Agency for Environmental Protection (ANPE) and the Ecole Nationale d'Ingénieurs Sfax (ENIS),
- **Gaza** : the Palestinian Water Authority (PWA) & the Coastal Municipalities Water Utilities (CMWU) , Islamic University of Gaza, the Environmental Engineering Department, the Ministry of Education, in Gaza Strip.
- **Deir El Ahmar** : Ministry of Energy and Water and Municipality of Deir El Ahmar, Baalbek-Btedhi District

We declare that we will put all our knowledge, experience, advice and financial means into the service of projects designed by the Young Water Ambassadors. We will influence national and local governments, international and regional organizations so that they put these projects into practice as quickly as possible. We will act in favour of the development of this type of partnership actions in the years to come thanks to the cooperation between the Water Embassy and the Union for the Mediterranean.



Creation of **Users' Clubs around STRATEAU** in partnership between Young Water Ambassadors and universities, research centres, local communities and Ministries is the next step in the development of the action of Water Embassy.

This club could be launched to the Mediterranean scale then will develop towards an international network on the basis of projects. But a technical and organizational animation is necessary, in particular for:

- Lead an electronic forum of mutual aid
- Organize periodic meetings of exchange of experiences, doubled by sessions of formation
- Establish a network of bodies to promote the tool and supply trainings in developing countries

The emergence of a STRATEAU Developers' Club will accelerate the development of electronic systems, in particular additional modules. This necessitates code sources of softwares made available presently used by STRATEAU, associated with a technical documentation.

- Have an approach opened with a club of "developers" for:
 - Allow the researchers / academics to dapporter their own models in the form of integrable complementary modules in STRATEAU
 - Favor the creation of footbridges towards existing systems
- Finance the translation of the documentation and the interfaces
- Accompany users to implement or adapt STRATEAU

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**STRATEAU is exposed as
a promising solution in
the Village of solutions**



Committee members technique STRATEAU

Alain Dutemps, Agence de l'eau Adour-Garonne
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Michel Stein, Agence de l'eau Loire-Bretagne
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Jacques Hayward, Veolia
Dominique Renaudot, Safège

Financial partners

Mission cellule UpM-Présidence de la République
Véolia Environnement
Suez Environnement
Ministère de l'Écologie, du Développement Durable, du Transport et
du Logement
Agence de l'eau Adour-Garonne
Agence de l'eau Artois-Picardie
Agence de l'eau Loire-Bretagne
Agence de l'eau Rhin-Meuse
Agence de l'eau Rhône-Méditerranée et Corse
Agence de l'eau Seine-Normandie
ONEMA

Active partners

Réseau Méditerranéen des Ecoles d'Ingénieurs (RMEI)

Le RMEI est composé de 45 universités techniques et écoles d'ingénieurs issues de douze pays et comprenant plus de 100 000 étudiants-ingénieurs.

Universities

West Bank/Gaza	Al Quds University Beir Zeit University An Najah University Islamic University
Liban	Notre-Dame de Louazé Université Saint Esprit de Kaslik Université libanaise. Faculté de santé publique *
France	Ecole Centrale de Lyon Ecole des Ponts ParisTech* Ecole Centrale Marseille *
Espagne	Polytechnical University of Valencia, Spain Escola Tècnica Superior d'Enginyeria Industrial de Barcelona (ETSEIB) *
Egypte	Cairo University, Egypt Université d'Alexandrie National Institute of Oceanography and Fisheries *

Portugal	Universidade do Minho, Portugal
Jordanie	Yarmouk University
Syrie	Faculty of Agriculture of Aleppo University
Algérie	Ecole Nationale Supérieure Polytechnique d'Alger *
Israël	Ben-Gurion University of the Negev, The Jacob Blaustein Institutes for Desert Research *
Italie	Università di Napoli Federico II *
Maroc	École Hassania des Travaux Publics *
Tunisie	Ecole Nationale d'Ingénieurs de Sfax* (ENIS) Ecole Nationale d'Ingénieurs de Sousse *

REMOB – SEMIDE – CORAIL – WEERC – Académie de l'Eau

Morocco :

Abdelaziz Zerouali, Directeur de l'ABH de Bouregreg et de la Chaouia
 Salah Belmatrik, ABH du Bouregreg et de la Chaouia
 Bendaoud Bouguenouch, Directeur de l'ABH du Bassin du Sebou

Jordan :

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 l'Irrigation
 Eng. Ali Subah
 Mohamed Bani Mustafa

Special dedication to have helped in revitalize and improve STRATEAU

A Rafiq Husseini, Secrétaire Général Adjoint Eau et Environnement de l'Union pour la Méditerranée, Secrétariat Barcelone Espagne pour ses encouragements

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Au Dr. Fadi Comair, Directeur général des Ressources hydrauliques et électriques du Ministère de l'Energie et de l'Eau-Liban et son équipe.

M. André Flajolet, Député, Maire de Saint Venant, Président du Comité national de l'eau, Commissaire du Gouvernement pour le Forum de Marseille

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A Léo Vicent, Président du RMEI

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L'Ambassade de l'eau

STRATEAU

Decision support tool



Secretariat of the Union for the Mediterranean
Secrétariat de l'Union pour la Méditerranée
الإمانة العامة للإتحاد من أجل المتوسط



ROYAUME DU MAROC



Ministère d'Etat chargé du
Ministère de l'Énergie, des Mines,
de l'Eau et de l'Environnement,
Ministère de l'Eau et de l'Environnement



MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE



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