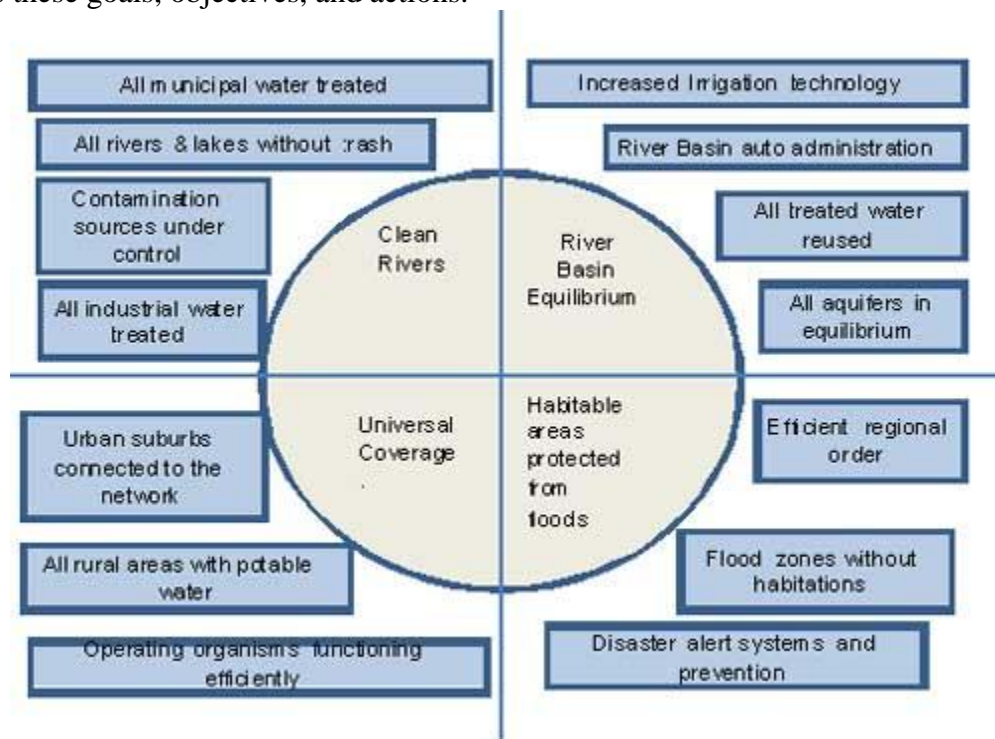


## 2030 Mexico Water Agenda and 2011 Modifications

The water sector in Mexico has gone through positive and negative changes in the last few years. Despite the efforts made so far, the water sector faces various challenges that require strong measures. The 2030 Water Agenda was proposed for this purpose. This program establishes the objectives during the next 20 years in Mexico in order to achieve water sustainability. The 4 main objectives (see the circle below) are: Clean rivers, universal coverage (potable and sewerage services), all waters treated, and habitable areas protected from catastrophic floods. The program has 14 actions directly related to these main objectives. The following graph describes these goals, objectives, and actions.



To make compliance with these 2030 goals more viable, annual, national targets were established for the 2007-2012: 92% potable water coverage, 88% sewerage coverage, 60% municipal wastewater treatment, and the rehabilitation of 500 dams. It was expected that by 2016 all main urban areas would be free from flood risks, by 2015 irrigation would be 100% technified and 100% of wastewater would be reused. By 2024, rural access to sewerage and potable water services would be 100% and by 2025, all industrial and municipal wastewater would be treated.

Some have said that these goals were lofty especially considering the following facts. Currently, 97% of urban areas but only 76% of rural areas have access to potable water. While 96% of urban areas have access to sanitation/sewer systems, only 63% of the rural areas have this access. While CONAGUA says that currently 46% of the municipal wastewater is treated in the country, in reality we believe that this figure is probably closer to 35%. To date, the competitiveness of Mexico's water and sewage systems is considered to be 20% below the Latin American average, well below Chile, Colombia, Argentina, and Brazil, and just below underinfrastructure Peru.

### **Formal Modification of Goals in 2011**

Considering the above comments and understanding that the 2030 Water Agenda goals were simply too ambitious, in 2011 goals for the Agenda 2030 were adjusted to create more practical and realistic goals. As a result of these changes, described at length below, national goals were reduced for the most part to regional goals and almost every one of the proposed actions and objectives were adjusted downward, most reprioritized from compliance by 2030 to compliance "after 2030" or "undefined".

As a first step, Conagua and the other government entities involved in the creation of the 2030 Agenda and in its modifications, established the following five regions/river basins as priorities: Valley of Mexico, Higher Lerma Mexico, Central Veracruz, Lower Papaloapan Veracruz, and Northeastern Quintana Roo. Supposedly, 76% of the 2030 Agenda budget will be destined for these regions all five of which have 3 or more of the identified priority problems. Details about these problems and priorities will be addressed later in the article.

The second step was to determinate the time lapse for each one of the goals divided into three groups: "by 2030", "after 2030" and "undefined". It is important to mention that the groups "after 2030" and "undefined" are almost indistinguishable and therefore add little value. However, at least with this difference, we can come to understand that the objectives of the group "after 2030" are supposedly higher priorities than those of the group "undefined".

Inside the first group ("before 2030") are three goals: (1) treat all municipal waters, (2) connect urban suburbs to sewerage networks, and (3) technify all irrigation. In the second group ("after 2030"), there are 5 goals that were originally established as pre-2030: (a) treat all industrial wastewater, (b) all water basins be self administrated, (c) all aquifers in balance, (d) all rural communities with potable water access, and (e) viable, fully functional local water agencies. In the third group ("undefined") there are 6 goals that were also originally established as pre-2030 goals: (1) all rivers and lakes waste free, (2) have all sources of contamination under control, (3) reuse all treated water, (4) achieve an effective water territorial order, (5) all flood zones free of human settlements and (6) flood/storm warning and prevention systems using high technology. It is important to mention that these current, modified goals could change with the new Presidential and potentially different Conagua administrations that will come on line in late 2012. If the PRI party that has been out of power for 12 years wins the Presidential election, it is probable that at least part of those goals will be changed and that some goals will move back into the "before 2030" group or, on the other hand, be further deemphasized.

As one can see, the formidable levels of the original 2030 Agenda goals dropped considerably with these 2011 adjustments. As mentioned above, regions were prioritized over national goals

in order to more realistically address problem areas. Also, of the total goals that were designated for compliance “before 2030”, only 21% were maintained as “before 2030”, 79% were reduced to the very ambiguous “after 2030” (35%) or “undefined” (44%).

### **Expected and Required Funding to Reach Modified 2030 Agenda Goals**

In order to accomplish these goals, Conagua and other governmental and NGO bodies have determined that \$1,024 trillion pesos or \$75.85 billion US will be required. From that total, as mentioned above, 76% will supposedly be destined for projects related to the previously mentioned 4 main goals/objectives in the 5 priority regions. Of this 76% or \$57.65 billion US, 44% will be for basins in balance, 27% for universal coverage, 15% for clean rivers and 13% for the protection of habitable areas from catastrophic floods. One can surmise from related 2030 Agenda action information that, for instance, in the area of basins in balance, extensive, new opportunities should exist for wastewater treatment plant and irrigation technification projects considering that 44% or over \$25 billion of the budget will be assigned to these two goals.

The other 24% of the total expected 2030 budgeted funds, or \$18.2 billion US, will be divided between two still somewhat ambiguous operational areas: operation & maintenance, and government actions. For the category operation and maintenance, supposedly 10% of the 24% will be designated. For the category of government actions, the other 14% of the 24% will be allotted. We hope to get better a better understanding of the types of activities and related projects and actions that will be part of these categories in the near future.

The following table shows a sample of the budgets and percentages from the 76% of the “project” related budget mentioned above.

<b>Main Objectives (76%) and Related Required Investment</b>			
<b>Objectives</b>	<b>Percentage</b>	<b>Investment (Trillion Pesos)</b>	<b>Investment (Billion USD)</b>
1. River Basin Equilibrium	44%	\$348	\$25.7
2. Universal Coverage	27%	\$215	\$15.9
3. Clean Rivers	15%	\$114	\$8.4
4. Habitable areas protected from floods	13%	\$107	\$7.9
<b>Total</b>	<b>100%</b>	<b>\$784</b>	<b>\$57.9</b>

There exist somewhat specific lines of action for each one of the four main goals, actions that were not defined prior to the 2011 modifications. With regards to point 1 ((River Basin Equilibrium), \$18.3 billion US will be designated to help diminish water demand while \$7.4 billion USD to increase water supply. As a result, water reuse has to become an unwritten

priority for the adjusted 2030 Water Agenda, especially when one realizes that currently 15% of Mexican aquifers are considered overexploited, a figure that will reach 25% by 2015, and that many of these aquifers already have high contamination levels.

In relation to point 2 (Universal Coverage), \$9.4 billion US will be assigned for the further expansion of potable water networks and \$6.5 billion USD for expansion of sewerage networks. The expansion of both networks are important actions if Mexican authorities truly want to meet publicized total, national coverage percentage goals.

In relation to point 3 (Clean Rivers), \$8.4 billion US will be assigned to the construction of wastewater treatment infrastructure. Opportunities in this area should directly impact companies supplying all types of wastewater treatment equipment as well as those handling disinfection systems. Finally, in relation to point 4 (Habitable Areas Protected from Catastrophic Floods), \$7.9 billion US will be assigned to increase equipment and systems for this important, troublesome, and politically sensitive objective.

### **Comments and Opinions about the Viability of the New Priorities**

Analyzing the goals and the new time groups for the Agenda 2030, we found some anomalies and surprises that we would like to mention.

**“Before 2030” Group** – Of the 3 goals that remained as priorities for “before 2030”, we consider that 2 of them will not be possible to accomplish by 2030: (a) all municipal waters treated, and (b) all the irrigation areas technified. With between 35% and 45% of municipal waters currently treated depending on who you speak to and with the still limited efforts and commitments to creating treatment coverage in medium and small size cities, we do not feel that 100% municipal treatment coverage during the next 18 years or three Presidential administrations is realistic. Considering that there are still 6.5 million non-technified irrigation hectares, we do not feel that it is likely that the goal of 100% coverage is likely by 2030. Therefore, two of the three priorities still targeting a “before 2030” time frame need to be downgraded to a post 2030 date and as a result, we feel that the investment in these two areas will not live up to expectations.

**“After 2030” Group** - In this group, there are 5 goals, 3 of which we think should be lowered to “undefined” or tertiary priorities: (1) treat all industrial wastewaters, (2) all aquifers in balance, and (3) viable, fully functional local water agencies. Considering that CONAGUA says that only 19% of industrial waters destined for federal water bodies are currently being treated and that no one knows the percentage of treatment for municipally dumped industrial waters, and considering that Conagua does not seem to be making serious investment or regulatory commitments in this area, we think that one cannot consider 100% treatment of industrial wastewaters as even a secondary priority in Mexico and that this is an area that we hope is

readdressed and elevated with the new 2012 Presidential administration. In relation to the second point and considering how problematic municipal and industrial treatment goals are, we feel that it is impossible to assign a realistic time frame for all aquifers being in balance. Finally, in relation to the third point, considering that infrastructure efficiency of the water segment is 76th in the world and well below Argentina, Brazil, Chile, and Colombia and below Peru, we don't see how Mexico is going to make this type of a leap nor do we see the funding or internal regulatory commitment by Conagua to make this a secondary rather than a tertiary priority in the modified 2030 Agenda.

**“Undefined” Group** - This group has 6 goals and somewhat surprisingly, we believe that 50% should actually be classified as a higher, secondary rather than tertiary priority (as “after 2030”). These three goals not only have high urgency but they also appear to be areas with relatively feasible solutions. In our opinion, creating alert and prevention systems with high technology and all flood zones free of human settlements while not simple should not be so complicated that we have to describe them as priorities that can't be assigned a defined compliance period. Also, we find it unacceptable that the Mexican authorities are not making this a higher priority considering the more than \$1 billion US in damages that have affected almost 8 million Mexicans because of storms and floods, problems that have happened yearly for decades without acceptable remedies and solutions. The third area, the reuse of all treated waters, seems like something that can and should be a higher priority and a priority with viable medium-term solutions. If Mexico wants to ensure that overexploited aquifers do not reach 50% or more by 2030 and that Mexico has sufficient potable water supply 20 years from today, water reuse has to be a much higher priority. And, if Mexico currently reuses more than half of its treated water and is the second country in the world for the reuse of non-treated residual wastewater, Mexican authorities should be able to visualize a time frame (rather than describing this as “undefined”) and be able to carry-out a medium-term, adequately funded and regulated program to accomplish this important goal.

## **Conclusions**

The 2030 Water Agenda started as a very ambitious program and as a result it very quickly became evident that the objectives of the Agenda were going to be extremely difficult if not in some cases impossible to meet. The 2011 Agenda modifications and attempts to better quantify actions related to these goals and objectives were an important step to ensure that this Agenda did not simply become an irrelevant academic exercise. The modifications will allow for a more realistic approach to many of the most urgent water problems and re-establish priorities according to the realities of the segment and available funding. Also, prior to these modifications, there existed no serious attempts to estimate the required funding to achieve these goals something that deserves recognition. And while it is good that CONAGUA has succeeded in separating and reprioritizing goals into three tiered groups, these groupings as they currently stand are almost meaningless and offer us little or no insight into how secondary priorities are

distinguishable from lower, tertiary ones. As a result, it is imperative that sometime in the first half of 2013, the new Presidential administration and the new leaders in CONAGUA study these problems and assign clear but realistic dates to these objectives and not continue to accept or work with vague time frames such as “after 2030” or even worse “undefined” for these urgent and underfunded water segment goals and solutions.