

Engineering for a Sustainable Future

The Earth's climate is changing and changing at a pace that has caught many unprepared. Natural hazards are expected to increase both in scale, frequency and severity in the coming decades, affecting some regions worse than others. Last June, rains, in the northeast coastal region of Argentina, caused rivers to overflow and put many provinces at stake because of the flooding. Identifying the causes can help reduce the negative impacts on the environment. The engineering profession plays a significant role in addressing and solving such disasters as well as in moving society to a more sustainable way of life.

The littoral region of Argentina suffered heavy rainfall during the past June that caused rivers to overflow, flooding and the evacuation of about 14,000 people. The provinces of Formosa and Misiones, situated in the northeast of the country, were by far the most affected due to increased flow in Paraguay and Uruguay rivers. Corrientes, Entre Rios and Chaco lived a similar scenario. In our province, more than 6,000 people were affected and most of them had to leave their homes to go to shelters or their relatives' in the wake of the floods. In Formosa, other 6,000 people were evacuated after the overflowing of the Paraguay River in several cities. In Corrientes, the increased level of flow in the Uruguay and Parana rivers affected

some 300 settlers established in riparian areas. Evacuations were also conducted in Chaco because of the overflowing of streams.



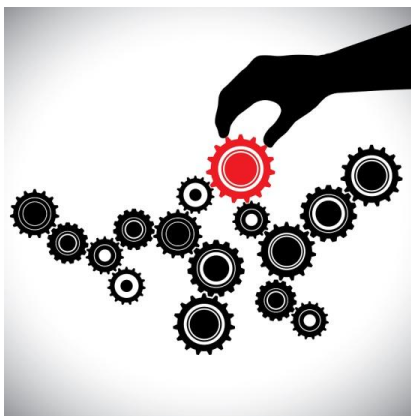
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According to experts, urbanization and deforestation are the main reasons that cause flooding as they are responsible for the loss of vegetation and soils. The vegetation holds down the soil, and contributes to its protection from heavy rains. The soils are very important because they act as a sponge, and absorb most of the water when it rains. When trees are cut and roads are built, it is easier for the rains to erode the soils. And when the soils disappear, rainwater simply rushes to the lowest point in the topography, where it accumulates and causes flooding.

Disasters are adverse and unfortunate events which have a profound effect on society. The recent natural disaster in our region affected thousands of people. Engineers can play a major role in

providing strategies for the mitigation of such catastrophic events. First, they could develop technologies for the enhancement of infrastructures, such as the improvement of soft soil, high-performance structures, and warning and rescue systems. Second, they could design infrastructures with high natural disaster resistance. Third, engineers could get involved in the rescue operation, restoration and reconstruction works after natural disasters.

Engineering activities shape the world through their product and process design, and through the management of the technical systems and innovations. Engineering makes a significant contribution to achieving sustainable development. From this and many other reasons, as future engineers, you have an obligation to be mindful of the effects that your work will have on the environment. In addition, you should take actions to prevent and reduce the undesirable effects of hazardous situations and contribute to building a sustainable society for the present and future generations.



<http://www.engineering.com/Education/EducationArticles/>

In April 2013 in the daily paper, *La Nación*, the journalist, professor and economist Antonio Brailovsky wrote “It’s time to remember that natural disasters do not exist. A disaster is the social expression of a natural phenomenon. Disasters do not start when we see them, but they are object of a slow social construction”. The recent natural disaster in our region has taught us that the development and application of technologies and knowledge for natural disaster mitigation are the compelling subject matter for engineers, today.



<http://www.examiner.com/article/sustainability-best-practices-among-leading-companies>

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