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Status of ground water quality in the coastal districts of Tamilnadu –A comparative study before and after the Tsunami impact

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The ground water samples were collected from the 600km coastal areas (around one km inland from the coast with two samples at 500m each at the same locations) have been collected from the Chennai city, Pondicherry , Chidambaram, Karaikkal and Nagapattinam before and after the tsunamis. These areas are severely affected by tsunami recently in the coastal of Tamilnadu. We have collected few samples as a reconnaissance survey in these areas for some other study before some days. Now we have collected samples representing these areas and are analyzing from their chemistry. Preliminary data s shows that there is a marginal variations in pH, Ec and Bicarbonate in these areas. We are analyzing the other dissolved parameters, Dissolved metals, and Nutrients an Ammonia to find out the impact of the Tsunami. In our earlier studies the As concentration and related metals and dissolved ions shows spatial and temporal variations. From the earlier studies following observations were made: Water quality in Chennai is very saline and enriched with Cl and Na in comparison to other two places. The saline water intrusion is found in Chennai and partially in Pondicherry and not in Chidambaram region indicating the over exploitation. The Agricultural activities seem to be contributing more Nitrates and phosphate to the ground waters of Pondicherry and Chidambaram. The Heavy metals are more in Chennai city. The As concentration ranges from 40- 140 µg l-1 in Chennai , 2-13.3 µg l-1 in Pondicherry and 0-16.23 in Chidambaram region. The As in Chennai seed to be contributed by industrial and domestic sources where as in Chidambaram it seems to be contributed by fertilizer application and leaching from sulphides minerals associated with lignite formation in the Coastal regions of this area. There is a strong negative correlation exists between Fe and As in these areas. The analysis of the recent samples before tsunami and after tsunami will be completed in a month or so and we will be able to get a clear picture of Tsunami impact to these coastal ground waters.