The Alarming Unsustainable Use of Groundwater Resources in Lebanon

In the last three decades, the country has lost more than 80% of its surface water resources and its inland groundwater has dropped for more than 20 m.

Pressure on groundwater is escalating alarmingly. Deep tube wells of 60 m jet void subsequent to dry years. Tube wells are distributed chaotically within the Valley. Domestic private tube wells are still being illegally drilled.

In Central Bekaa Valley, a high density of tube wells and the resulting overexploitation of resources led to mining of groundwater and vanishing of surface water sources and streams. Inlands, the Bekaa Valley is the largest agricultural zone of the country. Large arid areas of the valley were brought under groundwater irrigation since the sixties. Present a threat to sustainability of these resources should have strategies that draw future lines regardless of these resources.

Until the late 1970s, there was no need to draw laws and strategies for groundwater management because of its abundance. Littoral cities and most coastal lands are subjected to saltwater intrusion.

Agriculture is developing sharply over the mountains. Mountains agriculture is irrigated through rainwater harvesting reservoirs and from deep tube wells. Groundwater irrigation is applied on open field, crops, vegetables, fruit trees and greenhouses.

Field surveys were conducted on more than 200 farmers and on number of carwash stations. The conducted field survey aimed to understand farmers’ practices and irrigation water consumption per crop. Labors at carwash stations were friendly asked on head to head discussion. This is because carwash owners provided misleading information.

Lebanon is in a region of frequent drought events and in intense manners where groundwater aquifers are heavily used as additional water source.

Greenhouses and irrigated agriculture is spreading rapidly on the lower to upper mountain elevations of the littoral areas. Agriculture consumes over 70% of the available fresh water in the country, as always stated.

Tube wells technologies facilitated the abstraction of groundwater independently of place and time. Private wells are assuring water on demand where pumping technologies are available on diesel and electrical power. New technologies of tube wells and powerful pumping have widened the area of intensive cultivations. Farmers pump water from whatever depth and in uncontrolled amount.

In Lebanon, intensive Agriculture has expanded rapidly since the late sixties of the last centuries.