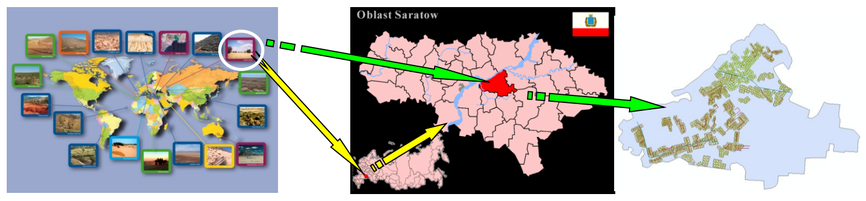
DESIRE

A global initiative to combat desertification



DESIRE, Russia, "Novy" : Two years testing of new SLM technologies

Novy Study site (51°82' N, 47°03' E) is located at Marksovsky District (29·103km2) of Saratov Region (Oblast) of Russian Federation. This region is situated in the southeast of the Eastern European plain named "Great Russian Plain" in the Lower part of Volga River, called Nighnee Povolzhie. (an area surrounding Volga downstream).

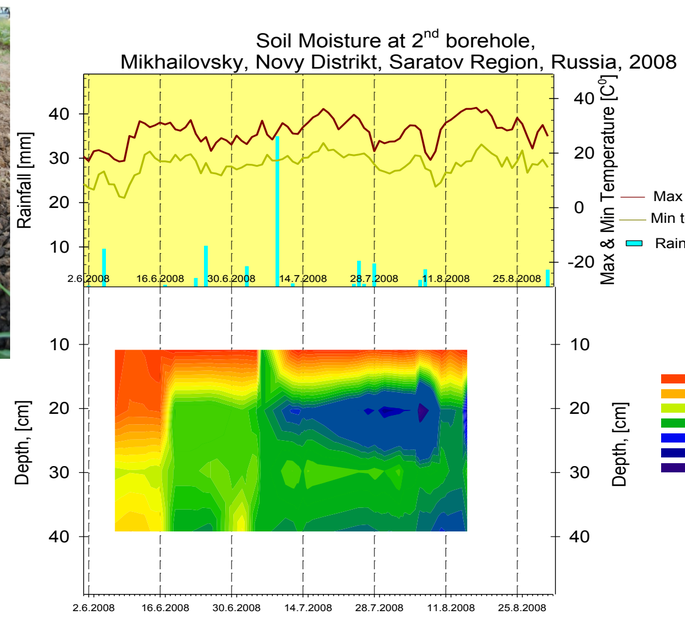
Major soil degradation problems :

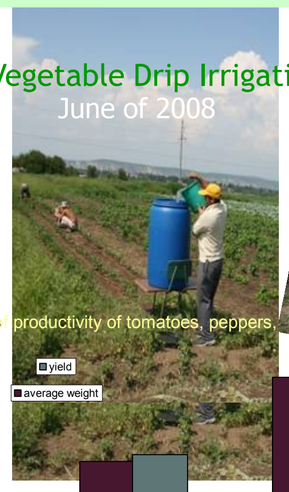
1) Ground Water Logging
2) Secondary Soil salinization
3) Not uniform irrigated soil properties

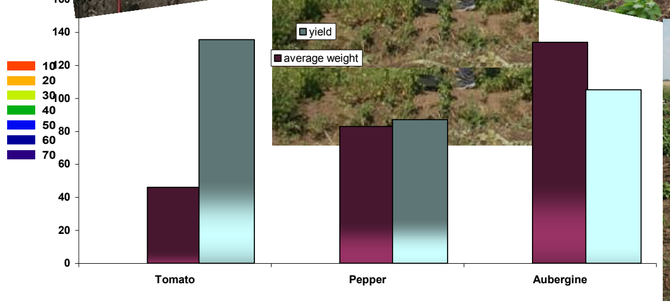
Two SLM technologies at local and regional scales are proposed :

1. Drip Irrigation of vegetables instead of Furrow Irrigation
2. Precision Irrigation of forage instead of "Overall" Irrigation

2008 - Growing Vegetables Technology Experimental Plot Results Stakeholders







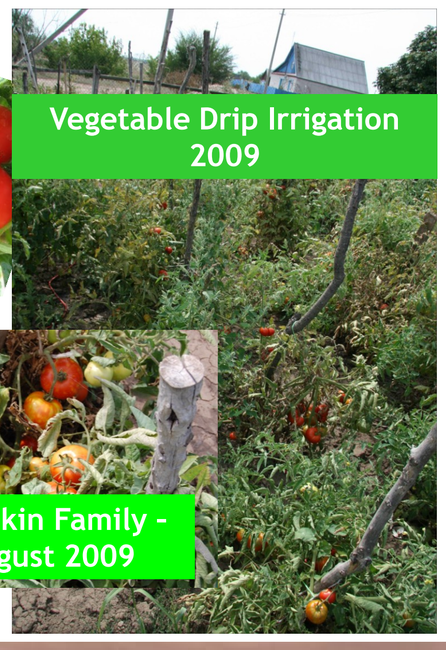
Furrow Irrigation of vegetables provides:

1) unproductive use of irrigating water;
2) sharp increasing of subsurface/ground waters;
3) over watering of root layer of soil;
4) pollution of the subsoil/ground waters by chemicals;
5) occurrence of water erosion and leaching of nutrients.

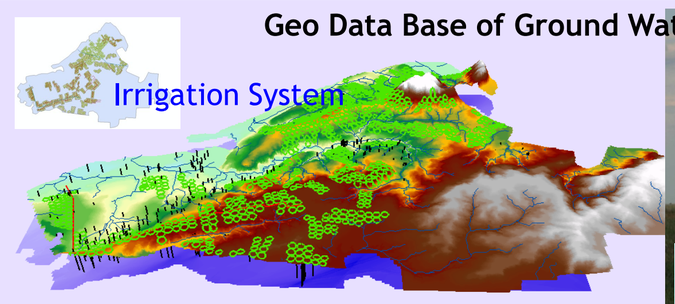
Drip Irrigation of vegetables provides::

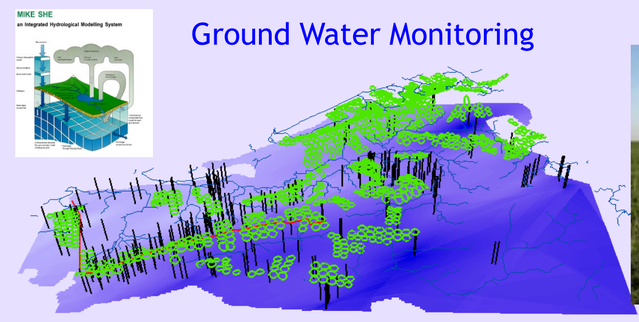
1) significant minimization of irrigating dozes;
2) easy adaptation of irrigation regime to water demand;
3) stopping of water leaching to ground water;
4) decrease of ecological risks for surrounding area.

2009 - Growing Vegetables Technology Experimental Plot Results Stakeholders



Geo Data Base of Ground Water, Soil Salinity and Plant Cover Monitoring





Precision Irrigation is promising SLM technology for large field/area. Its implementation needs a synergy of :

1) Robotized irrigation engine able spatially differentiate the application of water;
2) Geo-database of land-soil-groundwater properties;
3) Spatially distributed monitoring of soil moisture and plant water stress.

Precision Irrigation is promising SLM technology for large field/area. Its implementation needs a synergy of :

1) Robotized irrigation engine able spatially differentiate the application of water;
2) Geo-database of land-soil-groundwater properties;
3) Spatially distributed monitoring of soil moisture and plant water stress.