

Soil Moisture Monitoring, Analysis and Prediction in Agricultural Landscapes -- Draft Outcome Structure

Activities	Outputs	Level 1 Outcomes Uptake and application of GEOSS standards and other products	Level 2 Outcomes Changes in the availability and interoperability of EO info	Level 3 Outcomes Changes to decision support outputs	Level 4 Outcomes Changes in behaviour in response to new decision support outputs	Level 5 Outcomes High level Impact Statement
		<p>Soil moisture information users are formally consulted in the development of new services</p> <p>Data sharing agreements are in place between federal departments, provincial departments and other monitoring organizations</p> <p>Gaps and unnecessary duplications in Earth observing systems are reduced through collaboration to achieve a more effective overall fulfilment of user needs</p> <p>Modellers and monitoring experts regularly coordinate their plans for modelling and monitoring systems, domestically and internationally</p> <p>Soil moisture data assimilation and modeling capacity is in place in Canada (new)</p> <p>Processes involving modelers, service developers and users accelerate the transfer of scientific research results to operational services</p>	<p>Denser monitoring networks addressing key input data needs (e.g. soil moisture, precipitation, air temperature, wind, etc)</p> <p>New space-based remote sensing instruments address key input data needs (e.g. soil moisture, soil temperature)</p> <p>More accurate and higher resolution precipitation analysis</p> <p>Routine soil moisture analysis and forecasts (new) are used as input to atmospheric, hydrological, drought and crop condition models</p>	<p>More accurate weather forecasts, including severe weather</p> <p>More accurate hydrological forecast, including floods</p> <p>Farm level forecasts of soil moisture (new)</p> <p>More accurate predictions of droughts (weeks, seasonal, inter-annual)</p> <p>More accurate assessments of crop conditions</p> <p>More accurate predictions of crop damaging and disease vector pest risks</p> <p>More accurate assessment of water related impacts on biodiversity</p>	<p>More efficient use of water resources through timely and well targeted irrigation and basin management decisions</p> <p>Reduced use of pesticides through more timely interventions</p> <p>Higher crop quality through timely farm-level interventions</p> <p>More timely and better targeted response to floods by emergency organizations</p> <p>More timely and better targeted interventions by stakeholders in times of droughts</p> <p>More timely and better targeted interventions by stakeholders concerning disease vectors such as mosquitoes (e.g. meningitis, West Nile)</p>	<p>Higher farm gate revenues</p> <p>Optimized hydroelectricity production</p> <p>Reduced flood damage (deaths, injuries and property damages)</p> <p>Reduced drought impacts on society and the environment</p> <p>Reduced numbers of meningitis and West Nile virus infections</p> <p>Reduced pesticides loading in the environment</p> <p>Improved food quality and human health</p>