Climate Change Impacts on Agriculture

Agriculture in King County is sensitive to climate variability. Too little precipitation may result in not enough water for irrigation; while too much causes drainage problems and fields that are too wet to plant in the spring or harvest in the fall. Plants and livestock can be stressed by variable or extreme temperatures. The lack of extended cold periods allows certain pathogens and pests to persist and damage crops and harm livestock. Most of the county's agricultural land is located in low-lying river valleys so crops, equipment, structures and animals are very susceptible to flood damage. Climate change predictions are that most of these problematic conditions will become worse in the future and may affect:

- precipitation necessary for plant growth and irrigation
- pest and disease problems to crops and livestock
- types or varieties of plants grown
- time of harvest
- crop yields and livestock production
- energy and fuel costs and availability
- availability of livestock feed as crops elsewhere are affected (for example, hay from eastern Washington).

The water supply issue is very significant to agriculture, but it affects many other areas as well. As summer supplies decrease, there will be increased competition for water to serve farmers, fish, municipal water providers, and hydroelectric facilities. It is important that agriculture is considered in regional water supply planning and distribution. Creative solutions might include reclaimed water, water provided via pipe or groundwater recharge, and winter storage.

The potential impacts of climate change and the need to adapt are unlikely to be foremost on the minds of many farmers. Other issues, such as remaining economically viable for another season, are more immediate to the agricultural community. Instead, the relevance of climate change may be the ability to participate in clean energy campaigns. Farmers may see an opportunity to develop biofuels or other climate-friendly energy sources such as anaerobic digesters or wind power. Farmers may also benefit from new crops that can be grown in the slightly modified climates of the future.

The agricultural sector could benefit from more information on projected precipitation and temperature changes and research on new crop types and varieties better suited for the region as the climate changes. Adaptation strategies for the near-term include:

- acceleration of agricultural water supply planning, including an assessment of current needs and shortages
- improvement of economic conditions for agricultural enterprises (increased markets, reduced regulations)
- facilitation of reclaimed water provision to farmers.

Longer-term solutions might include facilitating land grant university research from institutions, such as Washington State University (WSU), for long-term agricultural adaptation to climate change.

In addition to the King County Agriculture Program, support to agriculture in adapting to climate change will have to come from other agencies and groups: King County Department of Development and Environmental Services, Washington State Department of Agriculture, Washington Department of Fish and Wildlife, Washington State Department of Ecology, and WSU Extension & Research Programs, the King Conservation District, and U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS).

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