AGBIZ LOGIC™

AN ECONOMIC, FINANCIAL AND ENVIRONMENTAL DECISION TOOL FOR FARMERS, RANCHERS AND LAND MANAGERS

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What is AgBizLogic™?

AgBiz Logic™ **is a user-friendly interface for** *AgTools™*

It integrates crop and livestock budgets, and whole farm assets and liabilities to *AgProfit™*, *AgLease™* **and** *AgFinance™*, **and will also integrate** *AgEnvironment.*

The goal of AgBizLogic is to provide online web-based decision tools (*AgTools™*) which can empower farmers, growers, and land use managers to:

(a) use data unique to their specific farming operations to develop management pathways that best fits their operations under a changing climate,

(b) understand how decisions about new programs, management options and technologies/varieties may impact their net returns and livelihoods and

(c) better envision which actions farmers can take to build resilience to a changing climate.

AgBiz Logic™ is an online user friendly interface that helps users gather and store business and enterprise information:

- Import accounting information.
- Create crop & livestock budgets (or choose from university generated enterprise budgets).
- Enter assets and liabilities

AgTools™ consists of a suite of software programs:

AgProfit™ Measures profitability of an investment based on net present value, internal rate of return, and cash flow analysis.

AgLease™ Establishes long-term equitable crop-share and annual cash rent payment leases based on contributions of each party.

AgFinance™ A whole-farm or ranch analysis of liquidity, solvency, profitability, repayment capacity and efficiencies based on 19 financial ratios and performance measures.
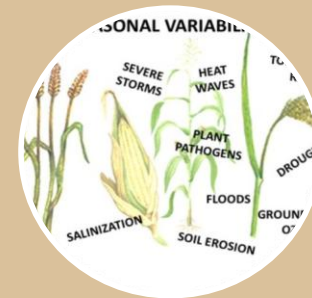
AgEnvironment™

(in development) is being designed to help users analyze environmental and economic trade-offs, and impacts on profitability and long run sustainability.

It will track environmental indicators such as energy, pesticide, and fertilizer use.

It will also incorporate regional yield models that vary according to expected precipitation and temperature patterns.

Ag Environment

- The EIQ Calculator developed by Cornel - A Method to Measure the Environmental Impact of Pesticides (http://www.nysipm.cornell.edu/EIQCalc/input.php).

- EPIC: Environmental Policy Integrated Climate Model - predicts effects of management decisions on soil, water, nutrient and pesticide movements, and their combined impact on soil loss, water quality, and crop yields for areas with homogeneous soils and management.

- COMET model – Voluntary Carbon Reporting Tool which generates a report that compares the carbon changes and greenhouse gas emissions between your current management practices and future scenarios (http://cometfarm.nrel.colostate.edu/).

- Beginning to collect downscaled climate data. Simulations of climate for 1950-2100 are available on the daily time step for surface variables of minimum and maximum temperature, minimum and maximum relative humidity, precipitation, downward shortwave radiation, wind speed, and specific humidity. From these data, we can calculate future changes in variables that will impact yields and management decisions such as growing degree days, frost free days, consecutive freeze days, etc.

- Researching Yield Response Models that can use the downscaled climate data to estimate future yields.
- Susan
- Connecting with stakeholders through focus groups and conferences
  - Tree Fruit Feldman's meeting February 17th in Wenatche, WA
  - Direct Seed and Oilseed 2015 conference January 20 - 22, 2015 in Kennewick, WA
  - REACCH - wheat growers TBA
  - Wine industry

Sample Decision:
Should I change my crop rotation?

Currently I have a winter wheat and fallow rotation using direct seed to conserve soil moisture, minimize soil erosion and fuel usage.

If I change to an annual cropping of winter wheat and introduce peas canola or camelina into my rotation I will have to purchase an additional combine and tractor and hire a full time employee and I will have added input costs

Can I afford to purchase an additional combine and tractor, and hire a full time employee?
- How will my cash flow change?
- How will my net returns change?
- How will environmental indicators change?

Sample output from AgTools

Table 1. Cash Flow by Annual Cropping System and by Year

Year	Winter Wheat & Fallow	Winter Wheat & Dry Peas	Winter Wheat & Canola	Winter Wheat & Camelina
1	$478,186	$676,350	$817,799	$551,412
2	$448,816	$735,359	$880,871	$606,300
3	$453,747	$645,711	$788,480	$516,843
4	$423,698	$805,886	$952,579	$672,506
5	$427,820	$598,327	$742,496	$465,290
6	$397,051	$723,800	$871,747	$585,836
7	$400,314	$578,615	$724,269	$441,155
8	$368,782	$718,011	$867,289	$575,185
9	$371,132	$583,707	$730,937	$441,554
10	$338,790	$684,112	$834,801	$536,127

Table 2. Net Farm Income by Cropping System and by Year

Year	Winter Wheat & Fallow	Winter Wheat & Dry Peas	Winter Wheat & Canola	Winter Wheat & Camelina
1	$368,644	$522,832	$652,282	$412,650
2	$340,547	$561,775	$694,928	$447,915
3	$347,026	$475,814	$605,852	$362,600
4	$315,538	$636,995	$770,576	$519,740
5	$320,743	$433,013	$563,676	$316,584
6	$289,061	$560,404	$694,441	$439,547
7	$285,667	$411,458	$542,785	$291,617
8	$254,723	$549,945	$684,465	$425,266
9	$257,887	$414,753	$546,783	$291,293
10	$226,273	$514,298	$649,331	$385,566
Total	$3,006,109	$5,081,287	$6,405,119	$3,892,778