



REACCH
Regional Approaches
to Climate Change –
PACIFIC NORTHWEST AGRICULTURE

**Annual
Meeting 2013
Speed Science
Presentations**



Intensification and Diversification of Wheat Cropping Systems

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Pictures top to bottom:

- 1) winter wheat-fallow-spring wheat-fallow near Lacrosse WA
- 2) wheat-canola-fallow near Cottonwood, ID
- 3) wheat pea comparison at Pendleton, OR
- 4) Researcher-grower-industry interactions essential to CS evolution

The 4 million ha REACCH region is 60% wheat and 30% fallow. Crop system (CS) diversification (legumes, oilseeds) and intensification (fallow replacement, more winter cropping) can mitigate GHG emissions, increase C fixation into food, feed and fuel, increase soil C sequestration, improve water and N cycling and use, reduce petroleum use, and improve the health of soils and wheat.

Oilseed and legume adaptation increases CS flexibility to shifts in climate, production economics, pests and societal demand for crops and environmental services. Successful alternative CS adaptation also requires **optimization** of these same drivers over space and time. REACCH research and stakeholder experimentation, proactive outreach and policy will facilitate CS intensification and diversification tailored to each AEZ.

Timeframe for wide-scale change in cropping systems is 5-20 years.



Figure: CS research focuses on **rotational** C, N, H_2O cycling, inputs, outputs

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