

V. Ryan Haden, Ph.D.
University of California
Land, Air and Water Resources
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Education:

Ph.D. Cornell University (2010)

Major: Soil Science. *Minors:* Agronomy, International Agriculture.

Dissertation: "Urea-induced ammonia toxicity in direct-seeded aerobic rice"

Committee: John Duxbury (advisor), Quirine Ketterings, Peter Hobbs

M.S. Cornell University (2006)

Major: Soil Science. *Minor:* Integrated Pest Management.

Thesis: "Weed control, competitive cultivars, and the system of rice intensification"

Committee: John Duxbury (advisor), Antonio DiTommaso, John Losey

B.A. University of Richmond (1999)

Major: Biology (cum laude)

Research Experience:

Postdoctoral Associate, University of California, Davis, CA, 2010 - Present

- Coordinated two interdisciplinary research projects on agricultural adaptation to climate change in California.
- Developed a geospatial index of California's agricultural vulnerability to climate change, urbanization and various socioeconomic factors.
- Completed a countywide inventory of agricultural greenhouse gas emissions in collaboration with local planning officials using IPCC tier 1 methods and the more sophisticated tier 3 Denitrification-Decomposition (DNDC) model.
- Evaluated farmers' perspectives on water scarcity and climate change risks and local opportunities for adaptation and mitigation through semi-structured interviews and quantitative surveys.
- Developed a Water Evaluation and Planning (WEAP) model that examines the impact of climate change, land use and adaptation scenarios on the Cache Creek watershed.
- Developed a Long-range Energy Alternatives Planning (LEAP) model for the evaluation of farm-scale renewable energy generation scenarios.
- Carried out field experiments on processing tomatoes testing the impact of alternative irrigation practices on yield, water-use efficiency, NO₃⁻ leaching and N₂O emissions.
- Mentor: Louise Jackson, Professor, Dept. of Land, Air and Water Resources

Affiliate Ph.D. Scholar, International Rice Research Institute, Philippines, 2007 - 2008

- Conducted field and greenhouse experiments investigating urea-induced ammonia toxicity and other pH related yield constraints in aerobic rice.
- Authored and managed a research grant funded by the Conservation, Food, and Health Foundation.

Research Assistant, Cornell Nutrient Management Program, Ithaca, NY, 2003 - 2006

- Designed and conducted laboratory experiments investigating the factors which affect Morgan and Mehlich-3 phosphorous levels following manure and fertilizer application.
- Analyzed recent historical data that evaluated statewide compliance rates of concentrated animal feeding operations to the New York Phosphorus Index.

Visiting M.S. Scholar, Bogor Agricultural Institute, Indonesia 2004 - 2005

- Carried out research in partnership with the NGOs FIELD Foundation Indonesia and Sumbangsih NUSA Tasikmalaya.
- Conducted on-farm trials evaluating 6 rice varieties for weed competitiveness under alternating wet-dry irrigation. Rice varieties were selected using participatory methods that sought input from both researchers and farmer groups.

Teaching Experience:**Cornell University – Teaching Assistant, 2003 - 2009**

Investigative Biology Lab – 2 semesters, 2009

- Undergraduate course for non-science majors
- Developed case studies for published course handbook highlighting the links between agriculture, the environment and society.

Soil Science Lab – 2 semesters, 2005-2006

- Undergraduate and graduate course for agricultural and environmental science majors

Introductory Biology Lab – 3 semesters, 2003-2007

- Undergraduate course for science majors
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Professional and Consulting Experience:**Independent Consultant, TIAX LLC., 2011 - Present**

- Provided guidance on the mitigation of greenhouse gas emissions through innovative agricultural practices and land use policies to the Sacramento Air Quality Management District.

Agricultural Consultant, Norlink International Inc., 2006

- Contributed insight on landscape design, cropping sequence, nutrient management and environmental sustainability for a West Java, Indonesia based vegetable and fruit production agribusiness *Tani Alami*.

Agricultural Consultant, Millennium Relief and Development Services, 2005

- Served in Aceh, Indonesia as an onsite technical advisor developing strategies for the remediation of salt contaminated soils damaged during the 2004 Indian Ocean Tsunami.

Community Development Assistant, Norlink International Inc., 2001 - 2002

- Conducted agricultural training workshops for Indonesian farmers.
- Established a vegetable and agroforestry nursery for village outreach.
- Coordinated a community-wide vegetable cooperative using participatory methods.

Agriculture Intern, Educational Concerns for Hunger Organization 2000 - 2001

- Developed skills in vegetable production, fruit tree grafting, greenhouse management, aquaculture and livestock in Ft. Myers, FL.
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Grants and Awards:

- Conservation, Food and Health Foundation Grant, “More Rice With Less Water: Overcoming technical constraints to water-efficient rice systems in Asia.” 2007 (\$21,400)
 - McDonald-Musgrave Graduate Student Award for Excellence, 2009 (\$1,000)
 - David L. Boren Fellowship, National Security Education Program, 2004-2005 (\$18,000)
 - Mario Einaudi Center for International Studies, Travel Grant, 2007 (\$1,300)
 - University of Richmond Undergraduate Research Grant, 1998 (\$600)
 - Colonial Athletic Conference Scholar Athlete Award: University of Richmond, 1995-1999
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Service Activities and Professional Affiliations:

- Member, Soil Science Society of America
 - Reviewer, Soil Science Society of America Journal
 - Reviewer, Industrial & Engineering Chemistry Research
 - President, Cornell Graduate Association for the Field of Soil and Crop Sciences, 2009
 - Graduate Fellow, Ausable Institute for Environmental Studies
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Additional Skills:

- Foreign Languages: Indonesian (intermediate level).
- Trained in methods of chemical analysis for water, soil, gas and plant samples including: AAS, ICP-AES, gas chromatography, colorimetry, C/N dry combustion.
- Proficient with SAS, JMP, SigmaPlot, QGIS, GRASS, ArcGIS

Peer-Reviewed Publications:

Haden V.R., J. Xiang, S. Peng, Q.M. Ketterings, P. Hobbs, and J.M. Duxbury (2011) Ammonia toxicity in aerobic rice: use of soil properties to predict ammonia volatilization following urea application and the adverse effects on germination. *Eur. J. of Soil Sci.* 62(4):551-559.

Haden V.R., J. Xiang, S. Peng, B.A.M. Bouman, R. Visperas, Q.M. Ketterings, P. Hobbs, and J.M. Duxbury (2011) Relative effects of ammonia and nitrite on the establishment of aerobic rice. *J. Plant Nut. and Soil Sci.* 174(2):292-300.

Xiang J., **V.R. Haden**, S. Peng, B.A.M. Bouman, R.M. Visperas, L. Nie, J. Huang, and K. Cui (2009) Improvement of N availability, N uptake and growth of aerobic rice following soil acidification. *J. Soil Sci. and Plant Nut.* 55:705-714.

Haden V.R., Q.M. Ketterings and J.E. Kahabka (2007) Factors affecting change in soil test phosphorus following manure and fertilizer application. *Soil Sci. Soc. Am. J.* 71:1225-1232.

Haden V.R., J.M. Duxbury, A. DiTommaso, and J.E. Losey (2007) Weed community dynamics in the system of rice intensification (SRI) and the efficacy of between-row cultivation and competitive cultivars for weed control in Indonesia. *J. Sust. Ag.* 30(4):5-26.

Extension Publications:

Haden V.R. and L.E. Jackson (2011) Agricultural Responses to Climate Change in California. *Rural Connections*, June Issue, p. 61-66.

Haden V.R. (2009) Can a consensus be reached on the benefits of SRI? *ECHO Development Notes*, 102:1-5.

Haden V.R., Q.M. Ketterings, J.E. Kahabka, and C. Czymmek (2007) How quickly will soil test P increase? Cornell Cooperative Extension Agronomy Fact Sheet Series. Fact Sheet 27, p. 1-2.

Manuscripts in Review:

Haden, V.R., M. Dempsey, S. Wheeler, W. Salas and L.E. Jackson. Involving local agriculture in California's climate change policy: A local inventory of agricultural greenhouse gas emissions. Submitted to the *J. Environ. Planning Manage.* in January 2012.

Krupnik T., J. Rodenburg, **V.R. Haden**, D. Mbaye, and C. Shennan. Genotypic trade-offs between water productivity and weed competition under the System of Rice Intensification in the Sahel. Submitted to *Agr. Water Manage.* in Dec. 2011.

Mehta V.K., **V.R. Haden**, D. Purkey, J. Perlman, and L.E. Jackson. Irrigation water demand and supply under historical and projected climate and land-use in Yolo County, California. Submitted to *Agr. Water Manage.* in December 2011.

L.E. Jackson, **V.R. Haden**, S.M. Wheeler, A.D. Hollander, J. Perlman, T. O'Geen, V. K. Mehta, V. Clark, J. Williams, and A. Thrupp. Vulnerability and Adaptation to Climate Change in California Agriculture. California Energy Commission Project No. 500-09-037, pp. 90, Submitted for external peer-review in December 2011 to be included in the forthcoming National Climate Assessment.

L.E. Jackson, **V.R. Haden**, A.D. Hollander, H. Lee, M. Lubell, V.K. Mehta, T. O'Geen, M. Niles, J. Perlman, D. Purkey, W. Salas, D. Sumner, M. Tomuta, M. Dempsey, and S.M. Wheeler. Agricultural Mitigation and Adaptation to Climate Change in Yolo County, CA. California Energy Commission Project No. 500-09-009, pp.153, Submitted for external peer-review in December 2011 to be included in the forthcoming National Climate Assessment.

Manuscripts in Preparation:

Haden V.R. A.D. Hollander, J. Perlman, T. O'Geen, and L.E. Jackson. A geospatial index of vulnerability to climate, urbanization and socioeconomic risks for California agriculture. (In prep.)

Haden V.R., M. Niles, M. Lubell, J. Perlman, and L.E. Jackson. Global and local concerns: What drives farmers' decisions to mitigate and adapt to climate change? (In prep.)

V.K. Mehta, V. Clark and **V.R. Haden**. Investigating the mitigation potential of on-farm renewable energy in California: A case study of Dixon Ridge Farms. (In prep.)

Conference Papers:

Krupnik T., J. Rodenburg, C. Shennan, D. Mbaye and **V.R. Haden** (2010) Trade-offs between rice yield, weed competition and water productivity under recommended and water-saving rice production practices in the Sahel. Paper presented at the Africa Rice Congress, Bamako, Mali.

Conference Presentations:

V.R. Haden, L. Jackson, D. Purkey, V. Mehta, H. Lee, D. Sumner, S. Wheeler, M. Tomuta, A. Hollander, A. O'Geen, B. Orlove, M. Lubell, J. Perlman, M. Niles, M. Dempsey (2010) Agricultural adaptation to climate Change in Yolo County, California, Poster presented at the ASA/SSSA/CSSA meeting, Long Beach, CA, USA.

Haden V.R., J. Xiang, S. Peng, Q.M. Ketterings, P. Hobbs, J.M. Duxbury (2010) Use of soil properties to predict ammonia volatilization following urea application and the adverse effects on germination. Poster presented at the ASA/SSSA/CSSA meeting, Long Beach, CA, USA.

L. Jackson, **V.R. Haden**, D. Purkey, V. Mehta, H. Lee, D. Sumner, S. Wheeler, M. Tomuta, A. Hollander, A. O'Geen, B. Orlove, M. Lubell, J. Perlman, M. Niles, M. Dempsey (2010) Local strategies for mitigating and adapting to climate change: a case study from Yolo County. Poster presented at the Governors Climate Summit, Davis, CA, USA.

Haden V.R. (2008) Can a consensus be reached on the system of rice intensification? Keynote presentation given at the Educational Concerns for Hunger Organization's (ECHO) Annual Agricultural Development Conference. Fort Myers, FL, USA.

Haden V.R., J. Xiang, S. Peng (2008) Acidifying N fertilizers and the influence of placement on rice growth in monocropped aerobic soil. Poster presented at the annual meetings of the Crop Science Society of the Philippines. Iloilo, Philippines.

Haden V.R., Q.M. Ketterings and J.E. Kahabka (2006) Factors affecting change in soil test phosphorus following manure and fertilizer application. Oral presentation given at the Northeastern Branch ASA/SSSA/CSSA meeting, Philadelphia, PA, USA.

Haden V.R., J.M. Duxbury, A. DiTommaso, and J.E. Losey (2006) Weed community dynamics in the system of rice intensification and the efficacy of between-row cultivation and competitive cultivars for weed control in Indonesia." Poster presented at the WSSA National Conference, New York, NY, USA.

Haden V.R. (2003) A review of the current status of SRI adoption: Hopes and Challenges. Oral presentation given at the Educational Concerns for Hunger Organization's (ECHO) Annual Agricultural Development Conference, Fort Myers, FL, USA.

References:

Dr. Louise Jackson, Professor and Extension Specialist, Dept. of Land, Air and Water Resources, One Shields Ave., University of California, Davis, CA, 95616, lejackson@ucdavis.edu, (530) 754-9116.

Dr. Mark Lubell, Assistant Professor, Dept. Environmental Science and Policy, One Shields Ave., University of California, Davis, CA, 95616, mnlubell@ucdavis.edu, (530) 752-5880.

Dr. John Duxbury, Professor of Soil Science, Dept. of Crop and Soil Sciences, 917 Bradfield Hall, Cornell University, Ithaca, NY, 14853, jmd17@cornell.edu, (607) 255-1732.

Dr. Quirine Ketterings, Associate Professor of Nutrient Management, Dept. of Animal Science, Cornell University, 323 Morrison Hall, Ithaca, NY, 14853, gmk2@cornell.edu, (607) 255-3061.
