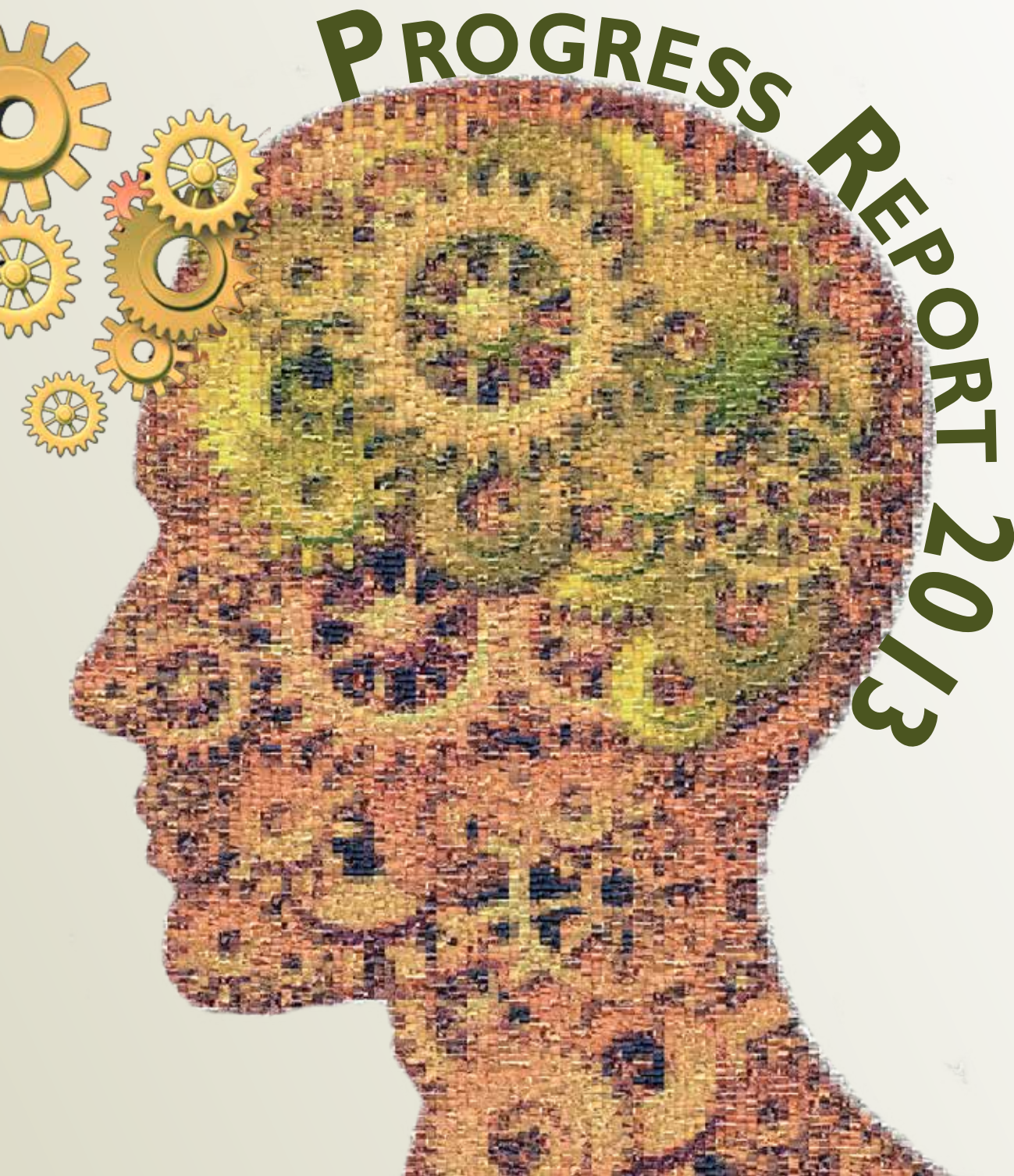




**ADM Institute for the  
Prevention of Postharvest Loss**  
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN





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# LETTER FROM THE DIRECTOR

Dear Colleagues,

Greetings from Urbana-Champaign! As you may have already heard, I have taken the role of the Director of the ADM Institute for the Prevention of Postharvest Loss as of January 2014. I am a professor in the Department of Agricultural and Biological Engineering at the University of Illinois, where I am also serving as an Assistant Dean of Research for the College of Agricultural, Consumer and Environmental Sciences (ACES). Before coming to the University of Illinois fifteen years ago, I worked at Kansas State University in Manhattan, Kansas, and with the USDA-Agricultural Research Service in Pullman, Washington. I am excited to serve in this leadership role at the ADM Institute.



During the last two months of my involvement with the institute, I have been meeting and listening to people associated with our research and outreach activities. I sincerely thank all our partners for carrying out the ADM Institute activities for which we are now better positioned to further the mission of the institute. The guidance and support of the ADM External Advisory Board and the Steering Committee to our former director Dr. Steve Sonka have made tremendous impact. I would like to express my sincere thanks to Dr. Sonka for his leadership and the ADM Institute staff for their work during the last three years.

As the ADM Institute enters its fourth year of operation, much has changed in the field of postharvest loss prevention. Awareness of the issue of loss and its impact on food security, climate change, and rural development has continued to grow. During 2013, we saw the international community increase its call for more reliable information and research about postharvest loss prevention, as well as initiate collaborative efforts focused on finding solutions. We began to see key partnerships and initiatives emerging among leading agricultural development institutions. The ADM Institute is excited to partner with **several of the current thought leaders in postharvest loss prevention**, including the Rockefeller Foundation, the United States Agency for International Development (USAID), and the Bill & Melinda Gates Foundation. The ADM Institute has achieved several other notable outcomes as an information hub in 2013, including that our number of network and on-the-ground connections made through faculty research and staff outreach has greatly increased. This is important because as technologies and approaches are developed through current and new prevention initiatives, the ADM Institute will have the capacity to engage its network to implement solutions for those affected by loss, particularly smallholder farmers. One example of this is our collaboration with IRRI in east India, where piloting of mechanical threshing options, combined with training and demonstrations, are already making an impact and empowering women's self-help groups to develop and provide postharvest services.

Looking ahead, the ADM Institute will intensify its efforts to bring even more national and international partners into our collaborations, and we will continue in making real-world impact. We aim to work towards finding solutions and implementing strategies for postharvest loss prevention and improve the quality of life for people and communities globally. In the near future, you will hear from us on our new initiatives. In this 2013 Progress Report, we have attempted to inform you of key highlights and activities of our institute. We invite you to read the report, and hope you find its contents of interest. If you would like additional information, please contact me at (217) 333-5115 or by email at [postharvestinstitute@illinois.edu](mailto:postharvestinstitute@illinois.edu).

I look forward to your continued support and guidance in carrying out our ADM Institute activities.

Sincerely,

Prasanta Kalita

A handwritten signature in dark ink, appearing to read 'Prasanta Kalita', written over a light blue horizontal line.

Director of the ADM Institute for the Prevention of Postharvest Loss

# EXECUTIVE SUMMARY

## Emerging Thought Leadership

Preventing postharvest loss will bolster food security without adding strain on the environment. To meet the rising food demands of the global population, leading institutions around the world are building collaborative initiatives that will address issues of loss and bring solutions to smallholder farmers for whom even small innovations can make big impact. In 2013, the ADM Institute developed partnerships with several of these institutions on the following projects or initiatives:

- The Rockefeller Foundation Waste & Spoilage in the Food Chain Development Initiative
- USAID Feed the Future Innovation Lab for the Reduction of Post-harvest Loss
- Co-Sponsored Convening with the Bill & Melinda Gates Foundation

In addition to developing partnerships with thought leaders, the ADM Institute also analyzed major themes emerging in the postharvest loss prevention field at its 2013 External Advisory Board Meeting. The themes included sustainability, economics, measurement, technology, gender, and scaling-up of interventions.

## Partnering for On-the-Ground Impact

Given that proven technologies and practices to reduce postharvest loss exist, *why don't farmers and managers around the world employ them?* This fundamental question is one that must be rigorously answered to prevent the loss of billions of tons of crops each year. The ADM Institute aims to identify the right solutions through interdisciplinary engagement and research that is both driven and informed by local stakeholders through building strong partnerships with experienced institutions. In 2013, the ADM Institute initiated research on the ground, and further expanded its growing network, which includes actors from South America, Asia, and Africa.

## Cereal Systems Initiative in Southeast Asia (CSISA) Project with International Rice Research Institute

Throughout 2013 and most of 2014, the ADM Institute is collaborating with IRRI on postharvest activities

as part of the CSISA Project. Focusing on locations in Bihar and Odisha, eastern India, the institute is providing funding to target drying and storage, mechanical threshing, training and demonstrations, and establishing pilot sites to test innovations and collect data.

## Measurement Survey with Research Center for Rural Economy, China

Initiated in October 2013, this project aims to explore the full extent of the issue of wheat postharvest loss in China. The project is unique in that it compares measured losses with estimated losses, an approach that has not been used before, experts believe. The project includes three parts, 1) a questionnaire survey, 2) field measurement of loss, and 3) documentation of the wheat supply chain and postharvest loss issues.

## Funded Research Highlights

The Scientific Animations Without Borders (SAWBO) team, now having created more than 20 videos in 20 languages or accents, continued to collaborate with government entities, universities and organizations to expand the impact of their videos. Their work has been brought to Brazil, Haiti, India, Myanmar, Uruguay, and many African countries.

Researchers focusing on Brazil leveraged their networks with the soybean association, APROSOJA, to produce a study on farmers' perceptions of loss, finding that preventing loss is often not a top priority for managers.

More updates on the [7 major research projects](#) funded by the ADM Institute in 2012 are provided in the report.

## Preparing Future Leaders

The global agricultural landscape is shifting rapidly, making it essential that the leaders of tomorrow develop the right tools and experience to address future challenges. Established at the University of Illinois at Urbana-Champaign, a premier research institution, the ADM Institute offers unique international engagement and research opportunities that allow students to critically analyze some of

today's most pressing agricultural issues. In 2013, the ADM Institute supported several students to travel and conduct research in India and Sierra Leone. The course in Sierra Leone involved a service-learning research component where a student team designed and executed a survey-based study on postharvest loss, finding an estimated 30% of rice is lost in the rice value chain. A Supply Chain Management course shared their experience on the ADM Institute blog, and MBA students created a video of their observations in India.

#### Student Blog Series:

- [Following the Flowers: A First Look at Indian Supply Chains](#)
- [Losses Along the Way](#)
- [Taste of India](#)
- [Southern Indian Hospitality](#)
- [For Field and Family: A Woman's Life Farming in Rural India](#)
- [Newer Facility Shows Efficient Grain Management in India is Possible, But Not Yet Justified](#)
- [Comparing Storage Facilities, Different Methods Lead to Postharvest Loss](#)
- [The Relevance of Research: Taking the Classroom to the Mills and Fields of India](#)

#### Expanding Outreach

In 1970, Henry Kissinger called on the world to reduce postharvest losses by half. Today, it is impossible to know whether the world achieved that goal due to a lack of research, information, and knowledge-sharing on postharvest loss. The ADM Institute, in serving as an information hub that curates, evaluates, and disseminates information about postharvest loss prevention, has developed a number of tools and services to transfer important knowledge of PHL to actors and stakeholders around the world. In 2013, it expanded and improved several of these tools, notably in improving its online presence and continuing to present to diverse audiences on the importance of prevention.

#### Media Analysis

The PHL in the News digest provides the latest on postharvest loss issues and interventions worldwide. In 2013, the ADM Institute continued to offer this valuable source of information on PHL to partners, senior leaders, and stakeholders across the globe.

#### Perspective Sharing

In recent years, awareness has grown about food loss and food waste. Many recognize that the problem of postharvest loss is complex, and mitigating it requires collaboration across all sectors. The ADM Institute launched a blog, [Preventing Postharvest Loss](#), in August 2013 to foster active dialogue among stakeholders. In January 2014, a series of student blogs produced by Supply Chain Management students during an ADM Institute-sponsored study tour in India was a great success. Students wrote about their observations and reactions to site visits, interviews, and in-country activities, and their posts were read in nearly 70 countries. A full report of their impact can be viewed [here](#).

#### Multimedia

In 2013, the ADM Institute made a series of high-quality photos available online on the popular photo-sharing platform, Flickr. The images capture various supply chain activities, instances of loss, and prevention research in India, the Philippines, and other countries. The photos are free to download and use with attribution, and can be viewed [here](#).

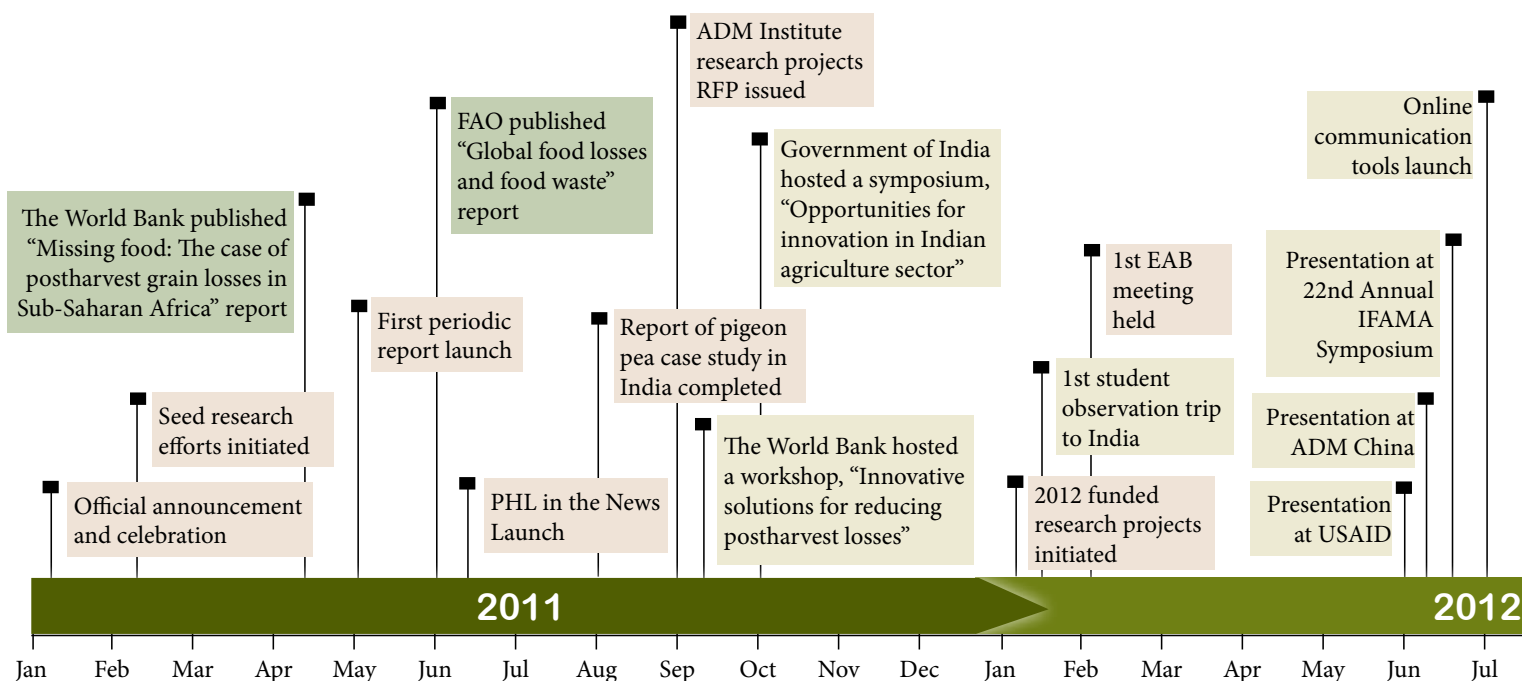
#### Knowledge Collection & Sharing

The ADM Institute actively uses Twitter to share news, research, and important information on postharvest loss prevention. In 2013, the ADM Institute expanded its outreach and volume of sharing. It also initiated the use of the hashtag [#postharvest](#) to promote and aggregate posts related to postharvest topics. Twitter is an important way the institute collects and shares information around the world, and it will continue to expand usage in 2014. Follow [@PHL\\_Institute](#).

#### Key presentations

- Breakfast Panel at 2013 Borlaug Dialogue – The Role of Science and Innovation on Food, Water, And Energy Security in the Postharvest Sector, Des Moines, Iowa
- USDA Economic Research Service Future of Agriculture Seminar – Postharvest Loss Prevention, ICT, and Innovation in Measurement, Washington, D.C.
- Global Studies Coffee Hour at the University of Illinois – Feeding 9 Billion: The Impact of Food Loss and Food Waste, Champaign, IL

# TIMELINE – KEY ADM INSTITUTE ACTIVITIES SINCE ESTABLISHMENT



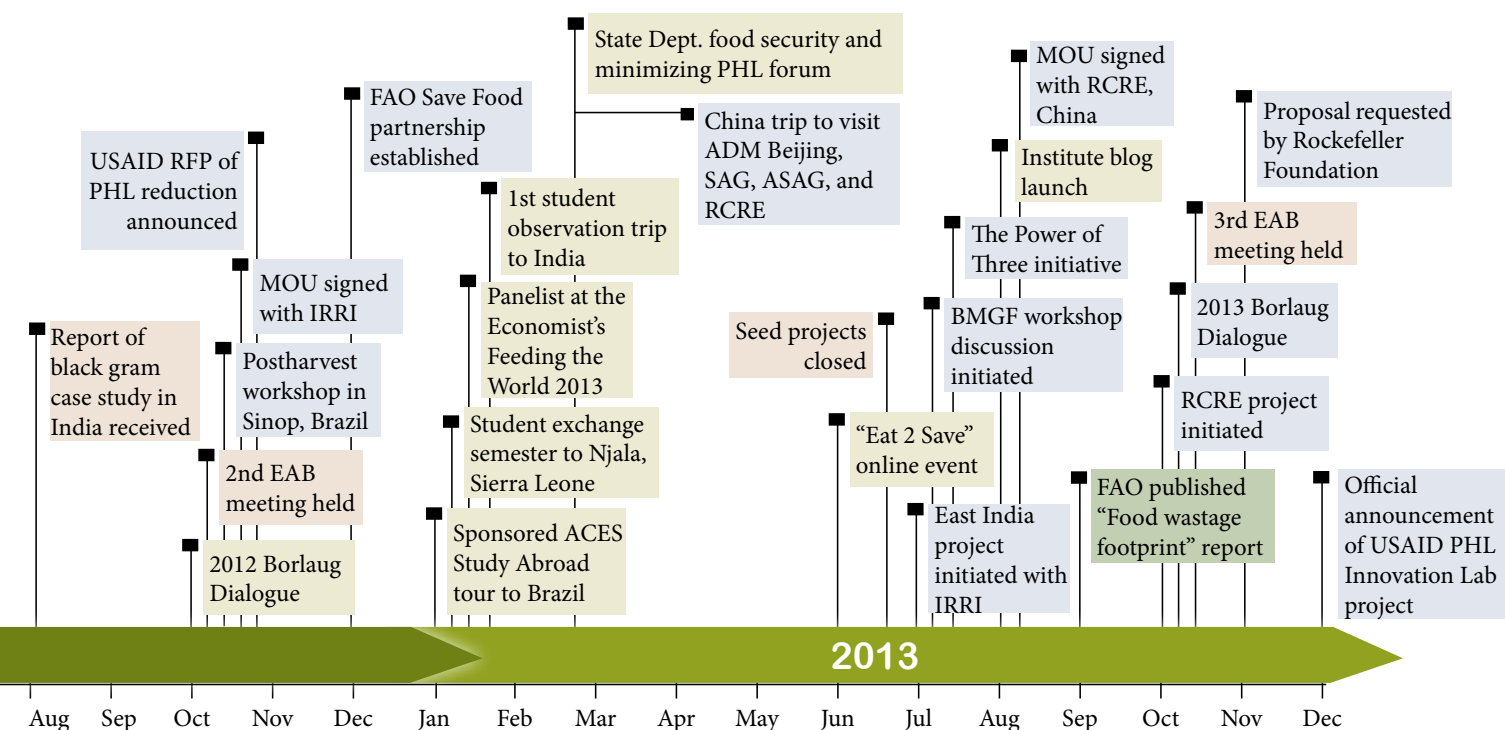
## Internal

- January 19, 2011: Announced and celebrated the launch of the ADM Institute for the Prevention of Postharvest Loss
- February 2011: Initiated seed research projects to identify possible approaches of PHL prevention, and funded three case studies to examine the status of postharvest loss in India
- May 2011: Launched the first periodic report to discuss the ADM Institute’s recent progress periodically
- June 2011: Launched the first edition of PHL in the News, published on a weekly basis
- August 2011: Received the report of pigeon pea case study, “A study on pigeon pea postharvest loss in Maharashtra” conducted by Maharashtra Hybrid Seed Company (Mahyco)
- Fall 2011: Issued RFP based on the four research themes of the institute
- January 2012: Funded seven research projects selected from the RFPs
- February 2012: Held the first External Advisory Board meeting in Chicago, Illinois
- August 2012: Received the report of black gram case study, “Mapping the production system and the supply chain and study the crop losses of black gram” conducted by MART
- October 2012: Held the second External Advisory Board meeting in conjunction with the Borlaug Dialogue in Des Moines, Iowa
- June 2013: Closed seed projects funded in early 2011. Some projects extended.
- October 2013: Held the third External Advisory Board meeting in conjunction with the Borlaug Dialogue in Des Moines, Iowa

## Outreach activities

- September 2011: Presented goals and approaches of the ADM Institute at the “Innovative solutions for reducing postharvest losses” workshop hosted by the World Bank in Washington, D.C.
- October 2011: Presented at the symposium on “Opportunities for innovation in Indian agriculture sector” hosted by the Government of India in Chicago, Illinois
- January 2012: Funded Supply Chain Management student trip to India
- June 2012: Presented at U.S. Agency for International Development (USAID) on postharvest loss and food security in Washington, D.C.
- June 2012: Presentation at 22nd Annual IFAMA World Forum and Symposium, Shanghai, China
- June 2012: Presented to ADM China to introduce the ADM Institute in Shanghai, China
- July 2012: Launched revamped website, Facebook page, Twitter, and YouTube channel to foster online outreach
- October 2012: Panelist at event, “Waste Not, Want Not”, and co-hosted side event, “Preventing Postharvest Loss to Advance Food Security”, at 2012 Borlaug Dialogue in Des Moines, Iowa
- Winter Break 2012: Sponsored ACES Study Abroad tour to Brazil
- Spring Semester 2013: Funded ACES class for semester at Njala University, Sierra Leone, to study rice postharvest system
- January 2013: Funded undergraduate Supply Chain Management class and students from Agricultural and Biological Engineering class observation trip to India
- January 2013: Presented at Feeding the World 2013 Conference hosted by the Economist in Amsterdam, the Netherlands
- February 2013: Presented at the Food Security and Minimizing Postharvest Losses forum hosted by the Department of State in Washington, D.C.
- June 2013: Held “Eat 2 Save” online event, sharing photos of how to reduce PHL in response to the 2013 UNEP World Environment Day. An infographic on global PHL percentages and tips for reducing loss was also circulated.
- August 2013: Launched ADM Institute’s blog, “Preventing Postharvest Loss”, to communicate institute perspectives on PHL issues and recent activities, and to foster discussions on PHL issues





## Collaboration

- October 2012: Signed MOU with International Rice Research Institute (IRRI) to foster projects in Asia
- October 2012: Co-hosted a two-day postharvest workshop in Sinop, Brazil, with APROSOJA and Embrapa
- October 2012: USAID announced RFP on global hunger and food security. The ADM Institute co-leads the project with Kansas State University, focusing on PHL reduction in four Feed the Future countries – Bangladesh, Ethiopia, Ghana, and Guatemala
- December 2012: ADM Institute became a partner of FAO's Save Food Initiative
- February 2013: Visited Chinese government entities, State Administration of Grain (SAG), The Academy of the State Administration of Grain (ASAG), and the Research Center for Rural Economy (RCRE), as well as ADM China in Beijing, to explore collaboration opportunities
- July 2013: Co-sponsored the Power of 3: Food, Water & Energy with the Institute of Food Technologists (IFT) in Chicago, Illinois
- July 2013: East India project on the assessment of improved postharvest technologies and training practices in Bihar and Odisha, India, initiated with IRRI
- July 2013: Discussions initiated with Gates Foundation on joint measurement conference for Spring 2014
- August 2013: Signed MOU with RCRE to initiate research projects in China
- October 2013: Initiated project to examine the extent of wheat postharvest loss in Henan Province, China, in collaboration with RCRE
- October 2013: Co-hosted a side event, "The role of science and innovation on food, water, & energy security in the postharvest loss sector", at 2013 Borlaug Dialogue in Des Moines, Iowa, with IFT
- November 2013: Rockefeller Foundation requested a proposal to establish the framework of PHL studies.
- December 2013: Announced receiving USAID award on the PHL project

## External

- April 2011: The World Bank published "Missing food: The case of postharvest grain losses in Sub-Saharan African" report, which is frequently cited in recent PHL studies
- June 2011: FAO published "Global food losses and food waste" report which provides estimates of PHL in different regions, commodities, and supply chain stages. This report is also frequently cited in PHL studies
- September 2013: FAO published "Food wastage footprint" report which examines the carbon and water footprints of food losses and food waste





# EMERGING THOUGHT LEADERSHIP

Preventing postharvest loss will bolster food security without adding strain on the environment. To meet the rising food demands of the global population, leading institutions around the world are building collaborative initiatives that will address issues of loss and bring solutions to smallholder farmers for whom even small innovations can make big impact. In 2013, the ADM Institute developed partnerships with several of these institutions. (Photo credit: IRRI)



# ROCKEFELLER FOUNDATION WASTE & SPOILAGE IN THE FOOD CHAIN DEVELOPMENT INITIATIVE

Supported by  
THE  
ROCKEFELLER  
FOUNDATION

The Rockefeller Foundation is exploring the development of an initiative to reduce food waste and spoilage in the agricultural supply chain. Food waste and spoilage—the loss of edible food at production, after production, during harvest and processing, and in the distribution stages of the value chain—limits access to nutritious food, threatens farmer incomes, and wastes precious resources like water and land. It is particularly acute in developing countries where food loss reduces income by at least 15 per cent for 470 million smallholder farmers and other actors along the value chain. Food loss poses a critical threat in Sub-Saharan Africa in particular, where the burden of food loss falls heavily on smallholder farmers and their families, many of whom also are food insecure. If developing countries cut food loss and wastage in half, they would yield enough to feed an additional 1 billion people by 2025. The Rockefeller Foundation's work on food waste and spoilage is in its strategy phase where they are working to identify opportunities and test key solutions in the supply chain to reduce food loss.

Through 2014 and 2015, the Foundation will be conducting a 'learning journey' to find interventions for better impact, scale, and influence. By partnering with organizations around the world, the Foundation

will be looking at issues faced by smallholders to best learn how to implement postharvest loss-related innovations in Africa.

The ADM Institute has received a grant of \$500,000 from the Rockefeller Foundation. The purpose of the grant is to identify successful findings in reducing global postharvest loss, scaling promising solutions, and promoting small holder farmers in the adoption of postharvest loss prevention technologies and practices. This study seeks to look globally at the major initiatives, the differences in issues and opportunities along multiple commodity supply chains and particularly at how to sustainably encourage adoption for smallholder farmers, in order to greatly improve their quality of life and reduce food insecurity through reduction of postharvest loss (PHL).

The ADM Institute is conducting this study to contribute learnings to this international multi-institutional effort. The three specific learning journey questions that the ADM Institute is addressing are:

- i. Lessons learned and what's worked well (re. the **highest potential intervention stages**) along the food supply chain in various countries for reducing waste and spoilage. How do country-specific (Asia: India, Philippines, etc. and Latin America: Brazil, etc.) intervention opportunities vary by specific crops (grains, cereals, roots, tubers, cereals, fruits and vegetables) and geographic area (areas that have rapidly accelerating infrastructure and market access or more remote areas)?
- ii. What promising solutions exist and what needs to happen to **scale the promising solutions** for food storage and preservation at the post-harvest and processing stages of the food supply chain?
- iii. What **issues, challenges, skills, and capabilities** do/should small holder farmers (SHFs), especially female SHFs, prioritize in order to reduce waste and spoilage, increase their incomes and off-farming livelihood options?



*Smallholder farmers in Hubli, India, processing maize after harvest. Credit: ADMI/G. Kenney*

# USAID INNOVATION LAB FOR THE REDUCTION OF POST-HARVEST LOSS



The Feed the Future Innovation Lab for Reduction of Post-Harvest Loss is a strategic and applied research and education program aimed at providing global leadership in food security by reducing post-harvest loss and food waste of durable staple crops (grains, oilseeds, legumes, root crops, seeds) and their processed value-added products. This program will confront constraints on integrating smallholder farmers (male and female), producer cooperatives, and agribusiness enterprises with market-based value chains from seed to end-user.

This Innovation Lab is part of the U.S. government's Feed the Future initiative to reduce global hunger and improve food security. The initiative uses research, education, and outreach to advance solutions for hunger, poverty, and under-nutrition in low-income countries. The International Grain Program at Kansas State University is the host for the Innovation Lab and is the ADM Institute's co-leader in this initiative.

The program aims to provide global leadership to reduce postharvest loss (PHL) and food waste of durable staple crops (grains, oilseeds, legumes, root crops, seeds) and their processed value-added products with an initial focus on four Feed the Future (FtF) countries (Bangladesh, Ethiopia, Ghana, and Guatemala). Interventions under this project will integrate smallholder farmers (male and female), producer cooperatives, and agribusiness enterprises with market-based value chains across the entire range of technical, economic and behavioral interventions that can reduce loss.

In addition to its organizational co-leadership role, the ADM Institute has specific responsibilities for reduction efforts in Bangladesh and for the application of advanced information technologies to enhance coordination within the effort and to deliver research results to stakeholders.

## CO-SPONSORED CONVENING WITH THE BILL & MELINDA GATES FOUNDATION

Later in the spring of 2014, a convening will be conducted to bring together organizations with a strong focus on PHL to explore opportunities for developing a common system to collect, measure, and track PHL data over time. The ultimate aim would be the development of a global database that can contribute systematically to the wider body of knowledge on PHL and ultimately move the field forward through changes in the comprehensiveness, relevance, accuracy, granularity, cost-effectiveness, timeliness, cross-comparability, and accessibility of international, national, and sub-national PHL data.

The team is planning to hold the convening over three days in Washington, D.C., in the second quarter of 2014. The objectives of the convening will be to:

- i. assess the major challenges facing statistics on postharvest losses;

- ii. identify the principal investment gaps in relation to conceptual frameworks, methodologies, data collection systems, harmonization mechanisms, and data-sharing platforms - and how these relate to user needs;
- iii. achieve broad alignment on a strategic vision for improving measurement and tracking of PHL;
- iv. agree on a process for planning the way forward.

In addition to serving as a co-sponsor, the ADM Institute will propose an innovative approach to develop a scientifically valid method to generate measures of loss which can support actions to reduce postharvest loss.

# BOARD DISCUSSES KEY QUESTIONS ON PHL PREVENTION

Each year, the ADM Institute hosts its annual External Advisory Board meeting at the Borlaug Dialogue in Des Moines, Iowa, so it can engage meeting participants with important topics and themes featured at the agricultural symposium. In 2013, five key questions were discussed by board meeting participants, a combination of External Advisory Board and Steering Committee members. The outcomes of the discussion helped frame and inform current ADM Institute efforts. The questions were the following:

- To what extent should the ADM Institute stress that zero postharvest loss likely is not a desirable goal?
- How is waste and spoilage reduction likely to affect crop prices throughout the food value chain?
- How can improved measurement system capabilities enhance postharvest loss reduction?
- Should the ADM Institute, in collaboration with an on-the-ground partner, establish a demonstration site employing most appropriate postharvest loss reduction concepts?
- What needs to happen to scale known low-cost innovative solutions? What issues, challenges, skills, and capabilities do/should smallholder farmers (SHFs), especially female SHFs, prioritize in order to reduce waste and spoilage, increase their incomes, and off-farming livelihood options?



*Some members of the EAB and Steering Committee, with ADM Institute staff member Kari Wozniak, in center. Credit: ADM Institute/G. Kenney*



# PARTNERING FOR ON-THE-GROUND IMPACT

Given that proven technologies and practices to reduce postharvest loss exist, why don't farmers and managers around the world employ them? This fundamental question is one that must be rigorously answered to prevent the loss of billions of tons of crops each year. The ADM Institute aims to identify the right solutions through interdisciplinary engagement and research that is both driven and informed by local stakeholders through building strong partnerships with experienced institutions. In 2013, the ADM Institute further expanded its growing network, which includes actors from South America, Asia, and Africa. (Photo credit: IRRI)





# ADMI, RCRE JOINTLY CONTRIBUTE NEW DATA ON POSTHARVEST LOSS IN CHINA

A joint research project is underway between the ADM Institute for the Prevention of Postharvest Loss at the University of Illinois and the Research Center for Rural Economy (RCRE) of Beijing, China, that aims to explore the full extent of the issue of postharvest loss in China. Each year, China produces 20% of the world's food, yet more than 50 million tonnes of food is lost or wasted along agricultural supply chains. Preserving what is already grown is critical for achieving food security, especially in China. The project examines wheat postharvest loss issues by comparing measured losses with estimated losses, an approach that has not been used before, experts believe.

The project was initiated in October 2013 after the two institutions signed a Memorandum of Understanding in August 2013. Conducted in Henan Province, China, the project includes three components: 1) a questionnaire survey to collect information on practices of harvest, storage, and usage, as well as the amount of loss during harvest and storage; 2) field measurement of loss; and 3) case studies to document components of the wheat supply chain and postharvest loss issues.

In July 2013, RCRE conducted a pilot survey in Gansu Province. Harvest and storage practices were examined during field visits and interviews, as well as the amount

of loss at each site. RCRE's researchers observed that many were receptive to the notion of reducing losses, and that there was a decreasing preference to store grain at home. Additionally, they found that farmers' estimations of the amount of loss largely varied. In similar situations, different farmers had different recollections of quantitative loss.

“ If we had both actual measurements and estimates of the same situations, this might be the first time that a correlation has been investigated between these two approaches to gain data.

– Steve Sonka

To address this issue, data on both farmers' estimations and measurement of actual loss will be collected in this project. The survey involves asking approximately 600 farmers how much postharvest loss they experience. Researchers will measure physical losses of the same survey region, giving them a picture of the differences between farmer perceptions of loss and actual loss. Experts believe this is the first time that a correlation has been investigated between these two approaches in loss data collection. Postharvest loss prevention efforts lack reliable and comprehensive data, which inhibits the development of effective solutions.

RCRE is a publicly-funded think tank in China that has an extensive survey network of over 23,000 households in 31 provinces and over 1,200 leading ag-processing companies in all provinces. RCRE will lead the project and conduct the survey, measurement, and case studies. ADM Institute faculty affiliates will contribute in defining the framework, designing the survey instrument, and assessing findings of the project.



*Grains lay on the ground without cover at an origination site in Henan Province. Credit: ADMI/G. Kenney*

# FOR SMALLHOLDERS, EAST INDIA PROJECT EMPHASIZES SUSTAINABLE TECH AND BUSINESS MODELS



*Discussing on-farm practices and loss issues with a women's self-help group in Bihar village. Credit: IRRI*

In 2012, the University of Illinois at Urbana-Champaign signed a Memorandum of Understanding with the International Rice Research Institute (IRRI) to further the goals of reducing postharvest losses of rice in developing countries.

Throughout 2013 and most of 2014, the ADM Institute is collaborating with IRRI on postharvest activities as part of the Cereal Systems Initiative for South Asia (CSISA) Project. Focusing on locations in Bihar and Odisha, eastern India, the institute is providing funding to target drying and storage, mechanical threshing, training and demonstrations, and establishing pilot sites to test innovations and collect data. This particular approach will emphasize the importance of sustainable business models and training of farmers through technical and business learning activities. Farm-level postharvest loss assessment data on both physical and quality losses will also be measured and estimated against improved technology options, where feasible.

In late 2013, Dr. Steve Sonka visited sites in Bihar, a state with more than 80% of its workforce employed in agricultural production, with Dr. Al Schmidley of IRRI to see first-hand the outcomes of some of the project's piloting activities. Visiting local NGO partners and women's self-help groups helped to better illustrate the context for losses in this relatively low-income region of eastern India and to get information on the real challenges still faced by many villagers. Of the visit, Sonka said, "It was good to see the potential for loss reduction, but it was much more exciting to witness the enthusiasm of the smallholder farmers and the women's self-help group with which we were working."

One outcome of this work is the continuation of the partnership with IRRI, as it is a sub-awardee under the USAID grant that the institute is co-leading. Bringing learnings from East India, IRRI will be working on similar issues in Bangladesh and will be transferring the knowledge gained along the way with the other partners under the grant.



*Steve Sonka with Al Schmidley, IRRI business model specialist, and colleagues in India. Credit: IRRI*

# SAWBO, IMPROVING SYSTEMS, EXPANDING OUTREACH

Within four years, the [Scientific Animations Without Borders \(SAWBO\)](#) team has created more than 20 videos in 20+ languages or accents. Collaborating with government entities, universities, and organizations, SAWBO's work has been brought to Brazil, Haiti, India, Myanmar, Uruguay, and many African countries, including Ghana and Ethiopia. The team is also expanding their distribution system from a website and social media platforms to a mobile app and portable extension system to reach out to broader audiences.

SAWBO was established in 2010 by Dr. Barry Pittendrigh from the Department of Entomology and Dr. Julia Bello-Bravo from International Programs and Studies at the University of Illinois. It is a program that uses animations to preserve and disseminate information and knowledge through mobile phones or portable devices. As the number of people in developing countries that own mobile phones continues to increase, Pittendrigh and Bello-Bravo find mobile phones to be an effective tool, especially for low-literate populations. Image and audio features of animations allow low-literate people to understand the information easily. Topics of SAWBO animations include agriculture, health and education, women's empowerment, and more.



*Collaborator uses SAWBO animations for training in villages in Burkina Faso. Credit: SAWBO*

At the beginning of 2012, the ADM Institute funded the SAWBO program to produce several animations, providing tips for preventing postharvest loss during transportation and storage, and planting methods of teff grain. Animations include:

- [Bag transportation](#)
- [Bulk transportation](#)
- [Bag stacking](#)
- [Storage](#)
- [Row planting of teff](#)
- [Teff transplanting technology](#)

Paramount features of SAWBO's work are its extensive network and various communication outlets. Animations are currently available on SAWBO's [website](#), [YouTube channel](#), [Facebook](#), and [Twitter](#), and the SAWBO team is now developing a mobile app. The app will provide greater convenience for users who will be able to look up animations by country, language, or topic on their mobile device. They also produce the "Extension System in Your Wallet" flash drive cards containing SAWBO animations to distribute to extension workers at conferences, workshops, and other events. Additionally, SAWBO held its first ICT session in Ghana in June 2013 to build new collaborations and create more language overlays of existing videos. By improving the animation distribution systems and expanding outreach approaches, the SAWBO team has been able to reach out to broader audiences.

While collaborating with groups to create new videos, the SAWBO team is aiming to increase more language versions for existing animations. Collaborators in Spain held a voice overlay training session in November 2013. 25 student volunteers participated in the training. To help with voice overlays, please contact the SAWBO team at [animations@illinois.edu](mailto:animations@illinois.edu).



# BRAZILIAN FARMERS' PERCEPTIONS OF POSTHARVEST LOSS

Recognizing a lack of postharvest loss research focused on farmers and on-farm management practices, Dr. Peter Goldsmith, Department of Agricultural and Consumer Economics at the University of Illinois, and graduate student, Anamaria Gaudencio Martins, conducted a survey on farmers' perceptions of loss in Mato Grosso, Brazil. Their project focused on farmers' perceptions of the extent and causes of loss on their farms, especially focusing on farmers' roles in loss management and the effect of measurement on loss reduction. Looking at three on-farm processing stages - harvesting, short-haul, and storage - researchers identified factors affecting their perceptions of postharvest loss.

Goldsmith and Martins conducted the survey at the end of 2012, which examined farmers' demographic characteristics and management practices. 158 farmers participated, and 94 of them fully completed the questionnaire. The survey participants were highly educated, most participants holding a bachelor's degree, and each harvested over 1,000 hectares of soybean. Interestingly, 36% of the participating farmers reported that they measure loss, which indicates that some farmers do include loss management in their practices.

The results showed that participants perceived an average 10.37% of loss at harvesting, short-haul, and storage stages, in which harvesting loss accounts for more than half of the loss. Over 70% of the participants considered two main factors for loss at the harvesting stage – 1) a lack of necessary adjustments at the platform, and 2) bad weather conditions. However, 64% of respondents viewed natural causes, such as insects and rodents, as an unimportant factor.

Goldsmith and Martins further analyzed factors affecting farmers' perceptions of loss. The regression model analysis indicated that:

- Older farmers perceived less on-farm loss.
- Farmers that have on-farm storage perceived less on-farm loss.
- Farmers who were aware of harvesting speed had lower perceptions of loss.
- Farmers who were aware of the importance of combine adjustments perceived less loss.
- Farmers who were aware of bad weather conditions held lower perceptions of loss.

Goldsmith and Martins concluded that farmers may not consider loss reduction a high priority, and future policies for loss reduction may take a management-oriented approach. Additionally, the reason why farmers don't change their behavior despite the fact that certain factors are controllable remains unexplained. Further research is needed to understand farmers' incentives for loss reduction.

This survey is part of Goldsmith's project, "[Managing grain losses in continuous cropping systems in the tropics through on-farm or cooperative storage](#)". Other activities included in this project was a postharvest loss workshop that was held in Sinop, Brazil, in October 2012, and an on-going research investigation examining characteristics of soybean loads delivered to elevators in terms of the grading system. A key local partner for this project is APROSOJA, a Brazilian soybean association.

# FUNDED RESEARCH PROJECT PROGRESS

## [The Nature of Small Landholder Agriculture in the Brazilian States of São Paulo and Paraná and Implication for Understanding Postharvest Loss](#)

Principal Investigator: Mary Arends-Kuenning

Progress:

- Assembled a bibliography of articles related to Brazilian smallholders in Portuguese and English
- Conducted a pilot survey to identify a picture of smallholder agriculture in São Paulo and Paraná
  - ▶ All data is analyzed and summarized in a Portuguese-language report.
- Collected crop distribution maps in São Paulo and Paraná



*A corn storage facility in Paraná. Credit: M. Garcias*

## [Supply Chain Policy and Strategy Analysis for Prevention of Postharvest Loss](#)

Principal Investigators: Kathy Baylis, Mindy Mallory, Dilip Chhajed, Udatta Palekar

Progress:

- Developed wheat supply chain maps in Madhya Pradesh, India, and identified wheat loss estimates in quantity and quality, as well as PHL issues along the supply chain

- Analyzed the price change and price dispersion in crop markets in India
- Analyzed how the market integration/efficiency affects farmers' access to the market and their willingness to store grains
- Developing rice supply chain maps in Tamil Nadu, India
- Modeling crop price and elasticity to understand farmers' incentives to invest in storage facilities

## [Appropriate Technology Development and System Integration for Postharvest Loss Prevention](#)

### **Biosensor Technology Development**

Principal Investigators: Wen-Tso Liu, John Popovics, Mary-Grace Danao

Progress:

- Established local partnerships
- Analyzing rice DNA samples to identify fungi and bacteria associated with stored grains:
  - ▶ Initial results of bacteria families associated with stored grain are available.
- Developing a cost-effective sensor

### **Materials Engineering for Durable and Sustainable Storage Structures**

Principal Investigators: Paramita Mondal, John Popovics

Progress:

- Examined the strength of fiber and cement mixtures
- Developing cost-effective building materials of cement-clay mixture:
  - ▶ Mixing cement with rice husk and fiber
  - ▶ Mixing new Indian cement with fiber



## Modeling and Optimizing Postharvest Storage and Handling Systems

Principal Investigators: Khaled El-Rayes, Youssef Hashash

Progress:

- Completed literature review on modeling and optimizing rice storage and handling facilities in India
- Developed a model to decide the optimized amount of wheat stored in existing facilities at different levels (farm, market, or region)
- Developing a model to decide the optimized type, size, and location for new storage facilities

## Integrating Information for Decision Support to Prevent Postharvest Losses at and Beyond the Farm Level

Principal Investigators: Ximing Cai, Imad Al-Qadi, Praveen Kumar

Progress:

- Established a pilot model showing how farmers decide harvesting day based on weather forecasting
- Continually connecting weather forecast data
- Analyzed the relationship between weather and harvest loss according to historical weather data
- Reviewed literature on the environmental impact of postharvest loss



*Collaborators in India installing a sensor to measure wheat loss in hermetic storage Credit: S. Pavel*



*Grain probe installed in a truck to measure soybean conditions during transportation in Mato Grosso, Brazil. Credit: M.C. Danao*

## Measurement, Documentation, and Postharvest Processing for the Prevention of Postharvest Losses of Soybean and Corn

Principal Investigators: Mary-Grace Danao, Richard Gates, Marvin Paulsen, Kent Rausch, Vijay Singh

Progress:

- Measured soybean and corn harvesting loss in Mato Grosso, Brazil, for 2 years:
  - ADM Institute-funded for the first year, and co-funded with APROSOJA for the second year. APROSOJA-sponsored for the third year.
- Tested grain probe at University of Illinois and applied in measuring soybean conditions during transportation in Brazil
- Documented quality of corn stored in silo bag for 6 months in Brazil - initial result shows the quality of corn is stable
- Monitoring quality of wheat stored in hermetic silo bags, conventional metal bins, and gunnysacks in India starting in June 2013

### Managing Grain Losses in Continuous Cropping Systems in the Tropics Through On-Farm Or Cooperative Storage

Principal Investigators: Peter Goldsmith; Altair Moura (Universidade Federal de Viçosa, Brazil)

Progress:

- Conducted case studies of seven farmers to understand what farmers think about postharvest loss and developed questionnaire
- Proposed the microeconomic theory of the economics of loss - some loss is efficient
- Conducted a survey of farmers' perceptions on postharvest loss at harvesting, short-haul, and storage stages
  - ▶ Identified main factors affecting loss at the three stages
  - ▶ Result: farmers tend to accept uncontrollable loss – i.e. loss due to weather conditions
- Conducting research focusing on the characteristics of soybean loads delivered to elevators in terms of grading system defects

### Education, Training and Information Transfer to Minimize Postharvest Losses – Scientific Animations Without Borders

Principal Investigators: Barry Pittendrigh, Julia Bello-Bravo, Francisco Seufferheld, Madhu Viswanathan

Progress:

- Created 6 postharvest loss videos, including bag transportation, bulk transportation, bag stacking, storage, row planting of teff grain, and transplanting of teff
- Deployed videos in Brazil, India, and many African countries
- Conducted field assessments in Benin, Burkina Faso, Ethiopia, Niger, and Nigeria
- Held an ICT training session to increase video language overlays and to identify collaboration opportunities

- Developed the SAWBO “Extension System in Your Wallet”, which is a USB card containing videos in major languages
- Developing SAWBO app for further video deployment

### Concurrent Science, Engineering, and Technology for the Prevention of Postharvest Loss

Principal Investigators: Luis Rodriguez, Yogendra Shastri, Yanfeng Ouyang

Progress:

- Identified areas where data is lacking, available, and potentially very useful in Indian supply chain
- Constructing modeling system:
  - ▶ To identify location for new infrastructure, such as road, port, etc. – currently focusing on Brazil
  - ▶ To identify location for new storage/drying facilities
  - ▶ To analyze grain supply system through network-based modeling
  - ▶ To analyze grain production and marketing through agent-based modeling
- Establishing contacts in Brazil for logistics modeling



SAWBO video – row planting of teff Credit: SAWBO



# PREPARING FUTURE LEADERS

The global agricultural landscape is shifting rapidly, making it essential that the leaders of tomorrow develop the right tools and experience to address future challenges. Established at the University of Illinois at Urbana-Champaign, a premier research institution, the ADM Institute offers unique international engagement and research opportunities that allow students to critically analyze some of today's most pressing agricultural issues. (Photo credit: ADMI/G. Kenney)



# ADM INSTITUTE SENDS BUSINESS AND ENGINEERING UNDERGRADS TO INDIA FOR THIRD TIME

In January 2014, fifteen students from the University of Illinois College of Business [Supply Chain Management \(SCM\) program](#) traveled to India to observe and understand the extent of postharvest losses in agricultural supply chains. Over the course of their 10-day trip through southern and northern parts of the country, the students visited farms, grain mills, storage facilities, wholesale markets, NGO offices, and a university campus specialized in environmental research. This year's trip marks the third time the ADM Institute, in collaboration with the John Deere Foundation, has supported this study tour in India. This trip was the first to involve [on-site communications](#), which provided the students with the unique opportunity to make their own impact through raising awareness for an important global issue while meaningfully contributing to the process of solving it.



*Students interviewed many local actors about agriculture and business practices. Credit: ADMI/K. Wozniak*

Most of the students, a mix of SCM and Agricultural and Biological Engineering undergrads, did not hail from an agricultural background, making the opportunity to study agricultural and agribusiness issues in another country a unique addition to their academic experience. The trip's packed itinerary included observations of several stages of commodity supply chains, and their discussions throughout focused on efficiency, an important topic in their fields of study. At the largest wholesale market in

Asia, the course leader and ADM Institute Steering Committee member, Professor Udatta Palekar, explained how and why vendors of paddy and flowers often experience profit losses at the point of sale. He showed the students examples of technical limitations and logistical issues at different stages. One day the group toured the sites of two large-scale grain storage facilities, one a public-private partnership and the other a government facility. Drawing on comparisons between the two, Palekar taught his students about the influence of supply chain actors like commodity agents, and how the powerful relationships they hold affect supply chain management.

Beyond observational learning, the trip provided ample opportunity for interaction with Indian locals. Students interviewed smallholder farmers, extension officers, facility operators, government officials, researchers, and others. They asked questions about their livelihoods, their practices, and about issues they face in their respective roles. In addition to gaining a deeper understanding of Indian agriculture, they also gathered vital information about how supply chain actors perceive and deal with issues of postharvest loss that they will share with the ADM Institute in a final trip report. Each year, this trip has had a significant educational and personal impact on Illinois students.



*Pictured: Elyse Kelly & Samer Ijaz, Junior and Senior in Supply Chain Management at Illinois. Credit: ADMI/K. Wozniak*



# PHL TOPIC OF ILLINOIS, NJALA STUDENT RESEARCH PROJECT IN SIERRA LEONE



*The student research team interviewed dozens of actors about postharvest losses of rice. Credit: P. MacNamara*

Postharvest loss of rice in Sierra Leone, one of the poorest nations in West Africa, contributes to an already tenuous food security situation. In spring 2013, the ADM Institute sponsored a semester-long University of Illinois exchange course at Njala University in Freetown, Sierra Leone, on agribusiness management and international trade for seven Illinois students and six Njala students. The course involved a service-learning component, in which students investigated rice losses. For their study, the student research team observed and documented losses, as well as interviewed various actors along the rice value chain throughout major regions in Sierra Leone.

The course was led by Dr. Paul McNamara from the University of Illinois Department of Agricultural and Consumer Economics, and the ADM Institute provided resources as the project client. The students designed, planned, and executed an interview-based study, conducting more than thirty interviews with farmers, merchants, laborers, and professionals throughout Sierra Leone. According to their report, the study found that approximately 30% of rice is lost in the postharvest rice value chain, with the greatest amounts occurring at the drying and storage stages.

The students captured and analyzed the perceptions of loss of farmers, millers, and other value chain actors, finding that it was difficult for farmers, laborers, and

merchants to quantify losses. When asked, many actors were most aware of losses that occur during storage. Moving forward, the students recommended that value chain actors be further educated about accessible local interventions to prevent loss, and provided with resources to improve postharvest systems. More research on the Sierra Leone context of postharvest loss is necessary, students also reported.

More results from the study, such as the various reported causes of loss at each stage, can be found in [the final report](#).



*Regions in Sierra Leone where the student research team collected data. Credit: ADMI/ESRI*



*Smallholder farmers in Sierra Leone lack basic storage and drying facilities for grains. Credit: Engineering 315 Course*



# THE BUG-REPELLENT BAG,

## A STUDENT INNOVATION

In January 2013, University of Illinois PhD student in Agricultural and Biological Engineering, Abhishek Dhoble, traveled to India with classmates in 'Sustainable Product and Market Development for Subsistence Marketplaces', a graduate course led by Dr. Madhu Viswanathan from the College of Business, which was sponsored by the ADM Institute. He and his team spent the previous fall semester studying major postharvest loss issues in India, developing conceptual plans for potential innovations, and then acquired more data and understanding on their trip over their winter break. Upon return, Dhoble and his colleagues developed what they thought would be a supportive 'in-between' solution for postharvest losses during storage, particularly for Southern India: neem paint for jute bags.



*Dhoble, left, and Bekal, right, in front of ongoing tests at the laboratory. Credit: ADMI/G. Kenney*

Neem oil, well known in developing countries for its insecticidal properties, was extracted and mixed with sustainable ingredients to form a type of 'paint' for the project. Dhoble then applied it to the exteriors of jute bags, protecting grain stored in the bags from pests which often invade bags during short-term storage.

Based off initial testing in a laboratory for their product, Dhoble and his colleagues developed a design, a business plan, and a product-entry plan for India. Upon presentation to the ADM Institute, it was

decided that this innovative product would move to the next level for more testing.

In the first test, Dhoble tested neem against e. Coli and cyanobacteria. Next, he will test the mixture against the soybean cyst nematode, with Sadia Bekal, a postdoctoral student specializing in nematodes. So far the findings have indicated that neem oil does deter the growth of the tested organisms at high concentration. They will also test different solution concentrations and versions to find a longer shelf life for the paint. Currently the team is also looking into pilot-testing the product with some Indian universities who have expressed interest in their project.

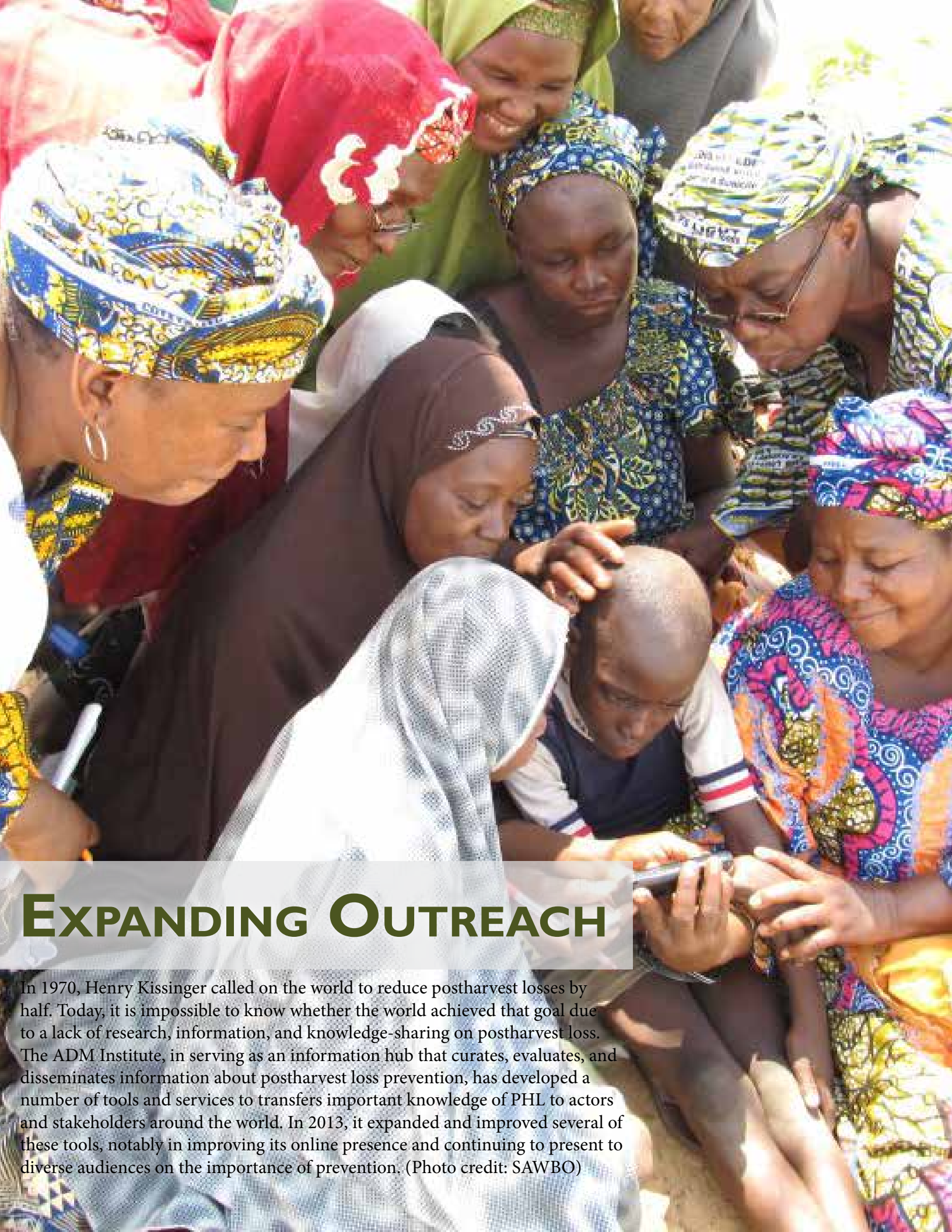
As this solution is made of locally-available materials, the paint will be easy and inexpensive to make in India. The paint ultimately will help farmers store their grain for a longer time, which will allow them to compete for better prices after the bulk of harvest has arrived at the market. The students' goal is to come up with a solution that is sustainable, environmentally-friendly, has a long shelf life, and successfully repels insects.

### MBA Course

In January 2014, Dr. Viswanathan led another class focused on subsistence marketplaces to India, with two groups focusing on postharvest loss issues. A class participant, Melissa Chua, created [a video recap](#) of the trip and major focus areas, also highlighting the impact on both students and on-the-ground participants.



*In the video, a student says, "To our fellow business & engineering students, it's our job to think outside the box." Credit: M. Chua*



# EXPANDING OUTREACH

In 1970, Henry Kissinger called on the world to reduce postharvest losses by half. Today, it is impossible to know whether the world achieved that goal due to a lack of research, information, and knowledge-sharing on postharvest loss. The ADM Institute, in serving as an information hub that curates, evaluates, and disseminates information about postharvest loss prevention, has developed a number of tools and services to transfers important knowledge of PHL to actors and stakeholders around the world. In 2013, it expanded and improved several of these tools, notably in improving its online presence and continuing to present to diverse audiences on the importance of prevention. (Photo credit: SAWBO)

# COMMUNICATING RESEARCH

- **Current media analysis.** In 2013, the ADM Institute continued and expanded upon its ongoing postharvest loss media project. Since it was established, the ADM Institute has curated and summarized relevant online news and other information into an e-digest called “[PHL in the News](#)”. This project has produced a media collection of over 1,000 articles covering PHL-related stories from around the globe. In late 2013, over 600 articles were entered into a searchable PHL in the News [media database](#). To-date nearly 100 digest editions have been published.
- **Perspective sharing.** The ADM Institute launched a blog in August 2013, a mechanism to virtually share perspectives and initiate dialogue on field-relevant topics. Called [Preventing Postharvest Loss](#), the blog allows the institute and its experts to make key perspectives available to those in the loss prevention community via thought pieces published online. The most successful use of the blog platform has been during the Supply Chain Management study tour in India. Students wrote about their observations and reactions to site visits, interviews, and in-country activities; their posts were read in nearly 70 countries. A full report of their impact can be viewed [here](#).
- **Knowledge Collection & Outreach.** The ADM Institute actively uses Twitter to share news, research, and important information on postharvest loss prevention. In 2013, the ADM Institute expanded its outreach and volume of sharing. It also initiated the use of the hashtag [#postharvest](#) to promote and aggregate posts relating to postharvest topics. Twitter is an important way the ADM Institute collects and share information around the world, and it will continue to expand its use in 2014. Follow [@PHL\\_Institute](#).
- **Multimedia.** The ADM Institute made photos of site visits available on Flickr in 2013. It recently expanded its collection, which can be used with attribution. They can be viewed [here](#).

Other featured posts include perspectives from senior leaders at the ADM Institute, updates on research, and events. The ADM Institute will expand its blogging outreach in 2014, and invites partners to share their perspectives via this platform. Contact Blog Editor, Kari Wozniak, at [wozniak5@illinois.edu](mailto:wozniak5@illinois.edu) for more information.



*A snapshot of the ADM Institute's Flickr photo stream.*



# KEY PRESENTATIONS

## Breakfast Panel at 2013 Borlaug Dialogue— The Role of Science and Innovation on Food, Water, and Energy Security in the Postharvest Sector

At the 2013 Borlaug Dialogue in Des Moines, Iowa, the ADM Institute hosted a side event focused on postharvest loss and the food-water-energy nexus. The event featured expert panelists: Ashok Gulati, Chairman of the Commission for Agricultural Costs and Prices, Government of India; Mark McLellan, Director of Graduate Studies, Utah State University; and John Ruff, President, Institute of Food Technologists. The panelists gave important insights on the role of science and innovation in curbing postharvest losses, recommending policy innovations and public-private partnerships as two problem-solving mechanisms. More outcomes of this event can be found [here](#).



*L-R: Gulati, Ruff, McLellan, speaking at the ADM Institute side panel at the 2013 Borlaug Dialogue. Credit: ADMI/K. Wozniak*

## USDA ERS Seminar – Postharvest Loss Prevention, ICT, and Innovation in Measurement

In May 2013, former director Sonka presented at the USDA Economic Research Service's Seminar Series on the Future of Agriculture in Washington, D.C. His talk addressed opportunities to increase global food security by reducing postharvest losses. Dr. Sonka stressed the need to focus on the sustainable

prevention of loss. He also discussed how innovations in measurement, necessary to make progress for loss prevention, may be driven by technologies and approaches that are low cost, systemic, and ICT-enabled.

## Global Studies Coffee Hour—Feeding 9 Billion: The Impact of Food Loss and Food Waste

In April 2013, former Director Steve Sonka led an undergraduate discussion on food loss and waste as part of an international coffee hour discussion series hosted by students from the [Global Studies program](#) in the College of Liberal Arts and Sciences at Illinois. Dr. Sonka framed the issues within the broader historical context of global food security challenges, also describing how university research contributes to international problem-solving. The students, from various educational backgrounds, asked questions on how postharvest loss affects other areas, such as national security and environmental sustainability.



**Steve Sonka**

Director of the ADM Institute for the Prevention of Postharvest Loss

April 10, 2013 6:30-8:00 PM

Illini Union Bookstore, Author's Corner

Hosted by Global Studies Leaders

Sponsored by Illini Union



*Event flyer for International Coffee Hour featuring the ADM Institute.*

# YEAR IN REVIEW



## Collaboration in China

Institute staff visited several Chinese government entities in February 2013. An MOU was signed in August with RCRE to initiate a wheat postharvest loss research project in Henan Province.



## Future Leadership

In April 2013, institute Research Professor Sonka gave a talk to students at the University of Illinois, discussing the impact of food loss and food waste on feeding the upcoming 9 billion people in the world.



## FAO Global Initiative Workshop

In April 2013, Dr. Sonka was invited to the FAO workshop on the methodology of food loss assessment and the development of a food loss reduction strategy in Rome, Italy, to provide opinions on improving the current methodology. (Photo credit: FAO/G. Napolitano)



## ICT & Innovation in Measurement in PHL Prevention

Sonka presented at the Future of Agriculture series of the U.S. Department of Agriculture Economic Research Service, in Washington, D.C., in May 2013 on the potential application of ICT tools on PHL prevention and the need for innovation in measurement.



## Eat 2 Save, World Environment Day 2013

In response to UNEP's World Environment Day, the ADM Institute held a virtual event, [Eat 2 Save](#), on its Twitter and Facebook page, asking people to think about how they can help to reduce food loss and waste.



## Blogging for Info Sharing

The ADM Institute launched its official blog, [Preventing Postharvest Loss](#), in August 2013. About 20 articles have been posted discussing institute perspectives and events, and more than 4,400 people have visited the blog.



## Indian Agriculture and the Right to Food

Dr. Ashok Gulati from the Government of India visited Illinois in October 2013. He gave a [speech](#) focusing on the critical role of agriculture in India, the growth of India, and the recently passed Food Security Bill.



## Food, Water, & Energy Security

The ADM Institute and the Institute of Food Technologists co-hosted a breakfast side event panel, "[The Role of Science and Innovation on Food, Water, & Energy Security in the Postharvest Sector](#)," at the 2013 Borlaug Dialogue in Des Moines, IA.



## Polishing Online Media Strategy

In November 2013, institute staff Kari Wozniak participated in the [COP19 Social Media Boot Camp program](#) organized by CGIAR in Warsaw, Poland, to gain hands-on knowledge and skills to apply to the institute communication strategy. (Photo credit: IMWI/N. Palmer)



## State Department Ideation Jam

Institute staff Grace Kenney attended an "[Ideation Jam](#)" hosted by the US Department of State to identify key improvement opportunities in the nexus of postharvest loss, publically available data, and technology in Washington, D.C., in November 2013.



## IRRI Collaboration and Site Visits

Dr. Sonka visited Patna and Chennai, India, and Manila, Philippines, with IRRI staff to look for future collaborative opportunities, as well as visit sites from the current joint project in December 2013.



## Students observing Indian Supply Chain

Illinois Agricultural and Biological Engineering and Supply Chain Management students reported their learnings on the [ADM Institute's blog](#) while on a field trip visit to study PHL in India in January 2014.



## Kenya Report Review and Engagement

Ms. Kenney visited partners in Kenya for a BMGF-funded workshop to review a PHL assessment of 11 African countries, meet with Rockefeller Foundation affiliates, and learn more about USAID efforts in Kenya on PHL in Feb 2014.



## Myanmar Agriculture and Education Opportunities

New director Prasanta Kalita visited universities and agricultural institutions in Myanmar to discuss potential PHL education and reduction activities in February 2014.



## Enhancing Collaboration in India

In March 2014, the ADM Institute held a Strategy Formulation Meeting on Postharvest Loss in New Delhi, India, inviting university representatives and government officials to identify local needs and potential interventions.





**ADM Institute for the Prevention of Postharvest Loss**

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