



## Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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### **Trip Report: Philippines and Cambodia** 28 June – 15 July 2011

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- Purpose of Trip:**
1. Visit project sites and partners in the Philippines
  2. Visit project sites and partners in Cambodia
  3. Serve as program co-chair for the 2<sup>nd</sup> International Conservation Agriculture Workshop and Conference in Southeast Asia.
  4. Participate in soil quality workshops in Cambodia.
  5. Brief USAID/Cambodia on our progress.
  6. Investigate possibilities for collaborative publications resulting from PADAC work in Cambodia.

**Sites visited:** Claveria, Philippines  
Phnom Penh, Battambang, and Kampong Cham, Cambodia

#### **Executive Summary:**

I served as Program Co-Chair for the 2nd International Conservation Agriculture Workshop & Conference in Phnom Penh, Cambodia from July 4-7, with 80 attendees. I visited research sites in Claveria, Philippines, and Battambang and Kampong Cham, Cambodia with host-country personnel. Meetings were arranged with USAID/ Cambodia, Fintrac, and the governor of Misamis Oriental, Philippines.

#### **Description of activities:**

##### **Philippines**

Dr. Jun Mercado and Dr. Vic Ella accompanied me to the Misamis Oriental State College of Agriculture and Technology, which offers MAg. and B.S. degrees, and also houses the local offices for ICRAF. The Claveria researcher-managed site is close to the college. In this area, researchers reported that the 300-650m zone consists of cereal-based agriculture, and those >650m are mainly corn, cassava, rice and vegetables, although a new Del Monte plant nearby has introduced pineapple plantations as well. Corn producers in the area do not use fungicides nor insecticides, and the corn showed little evidence of feeding or fungal damage. *Urea* and

complete fertilizers are in common practice. Rain in the area begins in late April to early May, although climate change has increased rainfall and producers can grow year-round.

Research plots in Claveria receive 3t lime/ha every other year. No-till treatments are planted by dibble stick, requiring about 8-10 person-days/ha. Conventional till plots require approximately 16-24 person-animal days/ha to plant. One person-animal day costs 250 pesos. The fields are on 20-35 percent slopes. Alley cropping treatments use about 10-15 percent of the land as vegetative filter strips. A weather station was installed about a year ago, but is only recently functioning. We downloaded data and confirmed that it is operational. The research station is located at N08°39'23.0," E124°51'45.1," 673 m elevation ([Figure 1](#)). On-farm research plots were also visited. These farmers were completely convinced about the benefits of conservation agriculture.

A meeting with the governor of Misimas Oriental, Oscar Serina Moreno, was arranged, and I was given the opportunity to promote SANREM interests. Governor Moreno was educated in the United States and is a family friend of Dr. Jun Mercado. He was so supportive of our efforts in Claveria that he has initiated a road improvement project to the research station. While this is certainly a good development for our research, I wonder how it may confound the socioeconomic data in the area, e.g., how will we know whether conservation agriculture or the new road is responsible for improved livelihoods?

### Cambodia

From June 4-7, we held the SANREM-supported 2nd International Conservation Agriculture Workshop & Conference in Phnom Penh, Cambodia. A CD of the presentations is available upon request or may be viewed here: <http://conservationagricultureandagroforestry.org/>. There were 80 participants, most of whom would not ordinarily have the opportunity to present their work at an international forum because they have limited budgets. The conference and workshop disseminated current knowledge of CA systems throughout SE Asia, parts of Africa and Brazil and demonstrated useful tools for in-field assessment of soil quality using the USDA Soil Quality Kit. We are planning to publish the papers resulting from the conference and workshop as a book or proceedings, although some funding will be needed.

On July 8, Manny Reyes, Cathy Chan-Halbrendt, Neal Eash, Stephane Boulakia, Jacqueline Halbrendt, and I briefed USAID on our work in Cambodia and on the results and impact of the conference and workshop. They seemed interested in our work, and requested a copy of the presentations from the workshop and conference. Two representatives from USAID attended the conference and workshop.

Several days were spent traveling to the SANREM research sites in Battambang and Kampong Cham. These sites consist of "matrix" plots (which I would term "semi-replicated screening trials") and on-farm trials. [\*Stylosanthes guianensis\*](#) (Aubl.) Sw. var. *guianensis* is the most promising cover crop used in both matrix plots and on-farm trials. It is reported to product 12-20 t/ha dry matter and is leguminous. Currently, it is most successful in maize systems, although our partner organization (PADAC, led by Stephane Boulakia) is attempting to incorporate it into cassava rotations. Cassava prices are currently high, so there is intense interest and pressure to grow no-till cassava, which is challenging because cassava is a tuber. There is also opportunity

for cattle fattening with *stylosanthes*, currently recommended at 6 kg fresh weight per day per head.

It is important to note that when comparing conservation and conventional agriculture, conservation agriculture treatments are fertilized, and the traditional practice controls are not. Since we are comparing a cropping system package, not just certain components of conservation agriculture, fertilizer is a necessary part of that package.

PADAC is a CIRAD and SANREM-funded Cambodian organization under France’s Ministry of Agriculture. French funding expires at the end of 2012; thereafter, funding for the project will only come from SANREM unless other funding becomes available. As a result, PADAC will cease to exist after 2012, and the conservation agriculture work will be completed by AVSF (Agronomes et Vétérinaires Sans Frontières) until 2014 with SANREM funding.

A meeting with the Cambodia HARVEST contractor Fintrac was arranged the day before I left Cambodia. I explained that the conservation agriculture system offers several benefits, that we already have a cropping system worked out ([Figure 2](#)), and a commensurate number of family participants and trained extension personnel. However, it appeared that conservation agriculture was not on Fintrac’s radar screen, although their chief of party did request contact information in Battambang so that he could see results from the technology. This is likely PADAC’s last chance for funding.

PADAC recognizes the importance of publishing the work they have successfully implemented in Cambodia. However, PADAC field personnel have limited time and experience to prepare manuscripts. I offered my assistance in this regard, which was well received. Some time was spent with Stephane Boulakia to review data and one manuscript previously published in a lay periodical. He agreed to send the information to me with additional data, and I agreed to review them and assist with manuscript preparation and submission. These are not scientifically rigorous data; the manuscripts will be sent to appropriate outlets.

**Suggestions, Recommendations, and/or Follow-up Items:**

- Contact presenters from the conference and workshop with instructions for authors who wish to be considered for publication.
- Send USAID/Cambodia the presentations from the workshop and conference.
- Send Fintrac contact information for conservation agriculture plots in Battambang.
- Obtain manuscripts and data from PADAC to facilitate manuscript preparation and submission.

**Training Activities Conducted:**

Program type (workshop, seminar, field day, short course, etc.)	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		
Workshop & Conference	July 4- 7, 2011	Regional and global CA researchers	60	20	SANREM, Royal University of Agriculture, CIRAD	Present state of the science on CA technology in SE Asia
Field instruction	June 30	Students and researchers	5	1	SANREM Soils CCRA	Clinometer proficiency

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Figure 1. Research site in Claveria, Mindanao, Philippines.

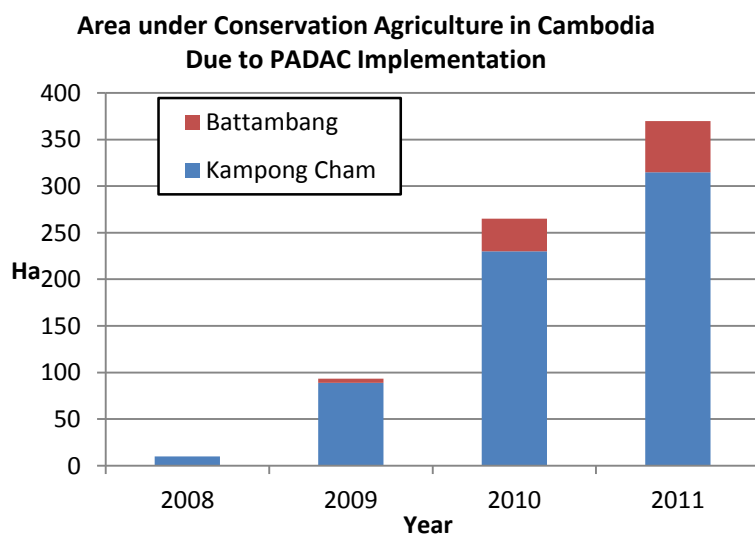


Figure 2. Area under conservation agriculture in Cambodia.