

# 2015 IPNI SEAP NEWSLETTER Quarter 1



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# NEWS FROM THE REGION

## Albay leads Bicol in Agri Performance

The Department of Agriculture has named Albay as Bicol's best performer in 2014 for its 93.7 percent rice sufficiency record. The province was also given the Agri-Pinoy Rice Achievers Award (APRAA) for its rice program. This is Albay's second outstanding award in a row.

Source: [The Philippine Star, March 1, 2015](#)

## Don't view lightly climate change, global warming, warns Najib

Prime Minister Datuk Seri Najib Tun Razak warned that climate change and global warming can no longer be viewed lightly. Rainfall patterns in Malaysia had changed and the country now faced prolonged draughts that there was water supply crisis in some states in 2014 and, continuous heavy rain resulted in some of the worst floods in decades with loss of lives and destruction of property.

Source: [Eco-business, February 27, 2015](#)

## Thailand off-season rice crop to fall 30 pct on yr as drought hits

Drought will cut major rice exporter Thailand's 2015 off-season crop by over 30 percent, according to the latest report from the Office of Agricultural Economics.

Source: [Thomson Reuters Foundation, January 8, 2015](#)

## Agro-industrial approach could mitigate cocoa shortfall

The cocoa sector valued at US 350 billion relies on cocoa produced by exclusively smallholders. Investors who made money in palm oil and similar crops believe they could replicate the success and address the possibility of shortage in the future.

Source: Coffee and Cocoa International, January 2015



## Palawan palm oil presence likely to grow, industry rep denies harmful impact

Plans to convert eight million hectares of land for palm oil production on Palawan island in the Philippines have been met with opposition from environmental and social advocacy groups, with a petition to cease development sent to the United Nations Commission on Human Rights by an anti-palm oil expansion group. But an industry representative denies claims that all eight million hectares will be cultivated to the detriment of wildlife and human communities, maintaining palm oil expansion will be beneficial to the people of Palawan.

Source: [Eco-Business, January 2, 2015](#)

## Giant on a Pinhead: profile of the cocoa sector

Hardman & Co. have reviewed the structure of the cocoa industry, its' supply chain and key actors in a recent report. It details the history of the crop and the complexities of producing premium cocoa.

Source: Coffee and Cocoa International, January 2015

## Production rate of rice in Eastern Shan State loss

In Eastern Shan State, Tachileik Province, the production rate of rice in Tharlay town is expe-

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# NEWS FROM THE REGION

riencing a half descent due to the loss of paddy to pest, according to the locals.

As a result of heavy rain pouring down in the region, although the local farmers use pesticides to kill the insects and fertilizers for its healthy growth, they are losing their paddy to pest since those substances are being washed away with the rain.

Source: [MYITMAKHA News Agency, January 13, 2015](#)

## Vietnam eyes increased cassava production

Around 3 million tonnes of cassava products are exported every year, bringing home more than 1.3 billion USD. The Vietnam Cassava Association (VCA) organized a conference in southern Tay Ninh province to seek to reap higher output for cassava, which is viewed as one of the staples helping eliminate hunger in the country.



## Get ready for future crisis in food production in Southeast Asia

Apart from the recent storms and typhoons that have ravaged Southeast Asian agriculture and food production since Cyclone Nargis in 2008, it is hard to envisage the climate extremes that affect Southeast Asia, where 30 percent all world rice is produced. The region is home to two of the world's largest rice exporters, Thailand and Vietnam, which account for slightly more

than half of world rice exports. Indonesia and the Philippines also produce significant amounts for domestic consumption, but very little leaves their borders.

Source: [Jakarta Post, January 17, 2015](#)

## Weak El Nino unlikely to disrupt Southeast Asia palm oil supply- research company

The weak El Nino conditions expected over the next three months are unlikely to disrupt palm oil output in Southeast Asia, the source of most of the world's supply, the head of a palm research company said. While it is still possible for El Nino to emerge in the first quarter of the year, it will be weak and will have little impact on palm output and prices.

Source: [Reuters, January 19, 2015](#)

## Philippine Agriculture to Continue Growth in 2015

Philippine agriculture is well-positioned to sustain its growth momentum this year, Agriculture Secretary Proceso Alcala said. And to help fuel this expansion, the DA chief said the Department will vigorously pursue rural infrastructure and technology build-up that will further develop and modernise the agricultural economy.

Source: [The Crop Site, February 10, 2015](#)

## Cassava Production in the South gets a boost

Close to 500,000 farmers and laborers in South Cotabato rely on cassava as a source of livelihood. In 2012, the province produced a record yield of 34.5 metric tons (MT) per hectare—the highest in the country—transforming the province into a significant player in cassava production not only in Mindanao, but for the entire country.

Source: [Department of Agriculture, February 16, 2015](#)

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# LITERATURE AT A GLANCE

## Profitability and implications of cocoa intensification on carbon emissions in Southern Cameroun

This study evaluated profitability of some models of cocoa farms and analyzed the relationship between cocoa yield, income and carbon stored in traditional cocoa agroforests to discuss implications of cocoa intensification on carbon emissions in Cameroun.

Profitability analysis using net present value indicated that farms rehabilitated by replacement of cocoa trees were more profitable. Intensified systems are more profitable at the various discount rates considered, with up to 50 % cocoa yield increase but with less tree shade (about 40 trees/ha).

Farmers did not use fertilizers but 82 % reported to use pesticides (insecticides and fungicides). Cocoa yields were low ( $346 \pm 202$  kg/ha) and are significantly influenced by the annual frequency of fungicide treatments (below 6 times:  $255 \pm 199$  kg/ha and 6 times  $463 \pm 201$  kg/ha).

Poverty is the major constraint to agricultural intensification and limits investments in chemical inputs use. In the absence of major interventions to support chemical inputs purchase, the design of intensification paths should be gradual and first target the improvement of management practices such as a better management of trees, improvement of maintenance and rehabilitation practices by replacement. Where financial resources are scarce, only good management practices may help to increase yield and profitability of cocoa farms without fertilizers and maintaining a high level of carbon stock. - Magne, Anne Nadege, Nathalie Ewane Nonga, Martin Yemefack, and Valentina Robiglio. *Agroforestry Systems* 88, no. 6 (2014): 1133-1142.

Click [here](#) to read more.

## Biodiversity is affected by changes in management intensity of cocoa-based agroforests

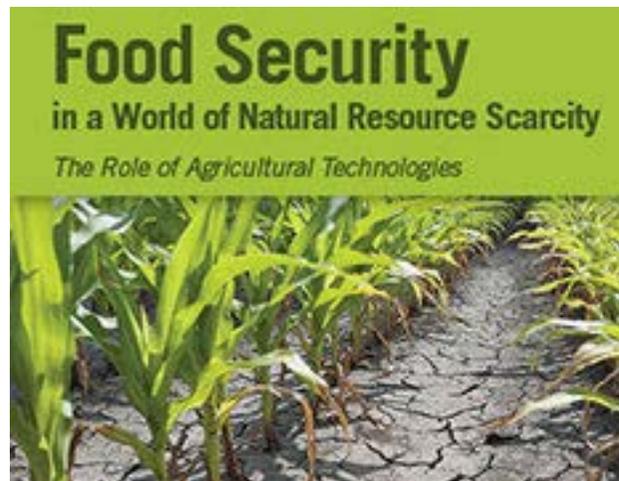
Abstract: Anthropogenic habitats are gaining increasing conservation value as deforestation progresses. Shaded tree crops, such as cocoa, provide habitats for numerous forest dependent species of high conservation value and play a largely undocumented role in providing other ecological services. Following previous work on the botanical composition and structural complexity of cocoa agroforests in Talamanca (Costa Rica), we assessed if differences in the vegetation composition and structure of 36 cocoa agroforests could affect the wild diversity of small mammals, amphibians, reptiles, soil and litter macro-invertebrates and epiphytes found on cocoa trees and associated plants.

Results show that Alpha-diversity is not affected by changes in vegetation structure and composition, except for amphibians and epiphytes found on cocoa trees. However, five taxa among eight showed distinct species composition patterns when compared among cocoa-based agroforestry clusters and with forest control. We showed that beta-diversity assessment enhances our understanding of the effect of management intensification on species composition and on habitat quality.

The proper design of the shade component in these AFS will certainly play a key role in segregating wild species hosted in these systems and will open a new field of research for the intensification of both cocoa and associated productions in these highly diverse systems. - Deheuvels, Olivier, Guillaume Xavier Rousseau, Grimaldo Soto Quiroga, Marcos Decker Franco, Rolando Cerda, Sergio Jose ´ Vi ´lchez Mendoza, and Eduardo Somarriba. *Agroforestry Systems* 88, no. 6 (2014): 1081 - 1099

Click [here](#) to read more.

## IFPRI Book highlights the role of agricultural technologies for food security



Published by the International Food Policy Research Institute (IFPRI), this ground breaking study divides the world's arable land into a grid of 60 kilometre by 60 kilometre cells and shows how eleven different agricultural innovations might affect maize, wheat and rice yields by 2050 under climate change conditions. Through linking this yield assessment with a global economic model, the book also reports on technology impacts on food prices, trade and food security. - Mark Rosegrant et al. (2014)

Click [here](#) to read more.

# LITERATURE AT A GLANCE

## Winner or loser of climate change? A modeling study of current and future climatic suitability of Arabica coffee in Indonesia

**Abstract:** Previous research has shown that the production of Arabica coffee (*Coffea arabica*), the main source of high-quality coffee, will be severely affected by climate change. Since large numbers of smallholder farmers in tropical mountain regions depend on this crop as their main source of income, the repercussions on farmer livelihoods could be substantial. We present results of a modeling study of climate change impacts on Arabica coffee in Indonesia, one of the world's largest coffee producers.

Focusing on the country's main Arabica production zones in Sumatra, Sulawesi, Flores, Bali and Java, we show that there are currently extensive areas with a suitable climate for Arabica coffee production outside the present production zones. Temperature increases are likely to combine with decreasing rainfall on some islands and increasing rainfall on others. These changes are projected to drastically reduce the total area of climatically suitable coffee-producing land across Indonesia by 2050. However, even then there will remain more land area with a suitable climate and topography for coffee cultivation outside protected areas available than is being used for coffee production now, although much of this area will not be in the same locations.

This suggests that local production decline could at least partly be compensated by expansion into other areas. This may allow the country to maintain current production levels while those of other major producer countries decline. However, this forced adaptation process could become a major driver of deforestation in the highlands.

We highlight the need for public and private policies to encourage the expansion of coffee farms into areas that will remain suitable over the medium term, that are not under legal protection, and that are already deforested so that coffee farming could make a positive contribution to landscape restoration. - Schroth, Götz, Peter Läderach, Diana Sofia Blackburn Cuero, Jeffrey Neilson, and Christian Bunn. *Regional Environmental Change* (2014): 1 - 10

Click [here](#) to read more.

## Carbon stocks and cocoa yields in agroforestry systems of Central America

**Abstract:** Cocoa based agroforestry systems are credited for stocking significant amounts of carbon and hence have the potential to mitigate climate change. Since cocoa yields de-

crease non-linearly with increasing shade, a need is to design optimal cocoa agroforestry systems with high yields and high carbon stocks. We estimated the carbon stocked in a network of 229 permanent sample plots in cacao-based agroforestry systems and natural forests in five Central American countries.

Total carbon (soil + biomass + dead biomass) was  $117 \pm 47$  Mg ha<sup>-1</sup>, with 51 Mg ha<sup>-1</sup> in the soil and 49 Mg ha<sup>-1</sup> (42% of total carbon) in aboveground biomass (cocoa and canopy trees). Cocoa trees accumulated 9 Mg C ha<sup>-1</sup> (18% of carbon in aboveground biomass). Timber and fruit trees stored 65% of aboveground carbon. The annual rate of accumulation of carbon in aboveground biomass ranged between 1.3 and 2.6 Mg C ha<sup>-1</sup> y<sup>-1</sup>. Trade-offs between carbon levels and yields were explored qualitatively using functional relationships documented in the scientific and technical literature, and expert knowledge.

We argue that it is possible to design cocoa-based AFS with good yields (cocoa and shade canopy) and high carbon stock levels. The botanical composition of the shade canopy provides a large set of morphological and functional traits that can be used to optimize shade canopy design. Our results offer Central American cocoa producers a rigorous estimate of carbon stocks in their cocoa plantations. This knowledge may help them to certify and sell their cocoa, timber, fruits and other goods to niche markets with good prices. Our results will also assist governments and the private sector in (i) designing better legal, institutional and policy frameworks, local and national, promoting an agriculture with trees and (ii) contributing to the development of the national monitoring, reporting and verification systems required by the international community to access funding and payment for ecosystem services. - Somarriba, Eduardo, Rolando Cerda, Luis Orozco, Miguel Cifuentes, Héctor Dávila, Tania Espin, Henry Mavisoy, Guadalupe Ávila, Estefany Alvarado, Verónica Poveda, Carlos Astorga, Eduardo Say, and Olivier Deheuvles.

Click [here](#) to read more.

## Potential cost of China's coffee strategy

China may become one of the world's top ten coffee-producing countries in the next ten years. Current evidence shows that coffee production in Yunnan province is growing exponentially due to rapid expansion. Yunnan coffee may sidestep some of the lower grade coffee from Central America, and offer the market cheaper coffee, but possibly at the expense of environmental decline. The Yunnan province which is already a biodiversity hotspot for deforestation and drought is

## LITERATURE AT A GLANCE

under tremendous pressure from this growing industry. Even with sustainable farming practices, government policies and subsidies for coffee development may lead to further environmental impact. - Coffee and Cocoa International, May 2015

### Study in Colombia shows benefits of fertilizer application in the coffee sector

A study carried out at the Land Air and Water Resources Department in University of California and National Centre for Coffee Research on Colombian coffee has demonstrated potential benefits to fertilizer application. An obvious indicator of performance, shoot biomass, was found to have increased with higher soil moisture and higher Nitrogen application. New recommendations are being worked on by the researchers who aim to increase the use of critical resources while, reducing the economic and environmental impact associated with N fertilizers. - Coffee and Cocoa International, March 2015

### Soil sampling in oil palm plantations: a practical design that accounts for lateral variability at the tree scale

The aim was to devise a practical soil sampling design for oil palm plantations that takes into account tree-scale variability, thus facilitating detection of trends in soil properties over time. We geometrically evaluated the ability of linear sampling transects to represent the distribution of typical management zones and radial patterns known to influence soil properties. The effect of sampling point density was tested using interpolated surfaces of soil biological, chemical and physical properties derived from values measured on a 35-point sampling grid covering the repeating tree unit in plantations with 15– 25-year old palms. The ability of sampling transects to represent the proportion of the plantation in various zones improved with increasing transect length and sampling density. Increasing the number of sampling points from 10 to 50 (using an acceptably long transect with length 5.57×palm spacing) decreased the maximum deviation between the overall mean and the transect-derived mean from 15.9 to 5.6 % for the most variable parameter, respiration, and 3.2 to 0.6 % for the least variable parameter, bulk density. Transect sampling provides an efficient means of obtaining a composite soil sample that accounts for tree-scale variability in oil palm plantations. The method is readily adaptable for other tree crops. - Nelson, Paul, Murom Banabas, Iain Goodrick, Michael J. Webb, Neil I. Huth and Damien O'Grady. Plant and Soil, Vol. 390, no 1-2 (2015)

## IPNI LIBRARY: NEW ENTRIES

We have updated our SEAP Reference Database with references dealing with the following topics: oil palm, cocoa, and nutrient and fertilizer management. For a complete listing of these references, please click [here](#).

## IPNI SEAP: IN THE PRESS

IPNI SEAP has in the first quarter of 2015 disseminated the following press releases:

Newsflash (January): [Influence of agronomic management on pH and soil organic carbon in oil palm plantations in Indonesia](#)

Newsflash (February): [Plantation Intelligence Incorporating Estate Scale Experimentation](#)

# UPCOMING EVENTS

**6TH INTERNATIONAL CONFERENCE AND EXHIBITION OF PALM OIL 2015**  
6-8 MAY 2015  
JAKARTA, INDONESIA

**[ROUNDTABLE ON SUSTAINABLE PALM OIL'S \(RSPO\) THIRD EUROPEAN ROUNDTABLE](#)**  
3 JUNE 2015  
AMSTERDAM, THE NETHERLANDS

**[NPK FERTILIZERS](#)**  
3-5 JUNE 2015  
BANGKOK, THAILAND

**[8TH INTERNATIONAL PLANTERS CONFERENCE](#)**  
8-10 JUNE 2015  
KUALA LUMPUR, MALAYSIA

**[SUSTAINABLE FOOD LAB 2015 SUMMIT](#)**  
8-12 JUNE 2015  
THE NETHERLANDS

**[OLEOFUELS 2015](#)**  
10-11 JUNE 2015  
FRANKFURT, GERMANY

**[ASEAN BEYOND 2015: COLLABORATION FOR EQUITABLE GROWTH](#)**  
23-24 JUNE 2015  
HANOI, VIETNAM

**3RD INDONESIA INTERNATIONAL PALM OIL MACHINERY, PROCESSING AND TECHNOLOGY EXHIBITION 2015**  
6-8 AUGUST 2015  
JAKARTA, INDONESIA

**[ASIA PALM OIL CONFERENCE](#)**  
20-21 AUGUST 2015  
SURAT THANI, THAILAND

**PALMEX THAILAND 2015**  
20-21 AUGUST 2015  
SURAT THANI, THAILAND

**[INTERNATIONAL PLANT PROTECTION CONGRESS](#)**  
24-27 AUGUST 2015  
BERLIN, GERMANY

**[AGRO 2015: 5TH INTERNATIONAL SYMPOSIUM FOR FARMING SYSTEMS DESIGN](#)**  
7-10 SEPTEMBER 2015  
MONTPELLIER, FRANCE

**[MPOB INTERNATIONAL PALM OIL CONGRESS \(PIPOC\) 2015](#)**  
6-8 OCTOBER 2015  
KUALA LUMPUR, MALAYSIA

**[MORINGA SYMPOSIUM AND CONGRESS "MORINGA: A DECADE OF ADVANCES IN RESEARCH AND DEVELOPMENT"](#)**  
19-22 NOVEMBER 2015  
MANILA, PHILIPPINES

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