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GLOBAL LEARNING AND EVIDENCE EXCHANGE
CLIMATE-SMART AGRICULTURE

DECEMBER 5–9, 2016 // SIEM REAP, CAMBODIA

Adaptation Mechanisms for Crop Production in Southeast Asia: Rainwater Harvesting, Conservation Agriculture with Trees and Drip Irrigation

Manuel R. Reyes, Kansas State University/Sustainable Intensification Innovation Lab

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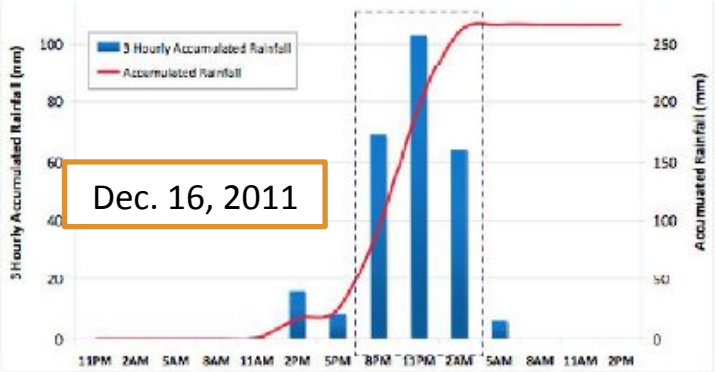
In Southeast Asia about 181 million hectares are acidic uplands

http://ontheworldmap.com/asia/map-of-southeast-asia.jpg

TOO MUCH WATER IN THE WET SEASON

Cagayan de Oro watershed

Photos courtesy of Jun Mercado and John Muir



230 mm of rain in 10 hrs

https://www.youtube.com/watch?v=Zo75O-1EIb0

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TOO LITTLE WATER DURING THE DRY SEASON

PROBLEM

As Walter relayed, let us just Nike it

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Coming Monsoon to Offer Relief Amid Record Drought

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BY AUN PHEAP AND JANELLE RETKA | MAY 16, 2016 | អត្ថាធិប្បាយ

The first monsoon of the season is expected to sweep across Cambodia this week with the rainy season beginning soon after, bringing some relief amid the worst drought in decades, the government said over the weekend.

Heavy storms are predicted to begin on Tuesday and last about a week, the Ministry of Water Resources and Meteorology said in a statement released on Saturday.

A farmer fetches water from a hole he dug in a dried up canal in Kampot last month. (John Vink)

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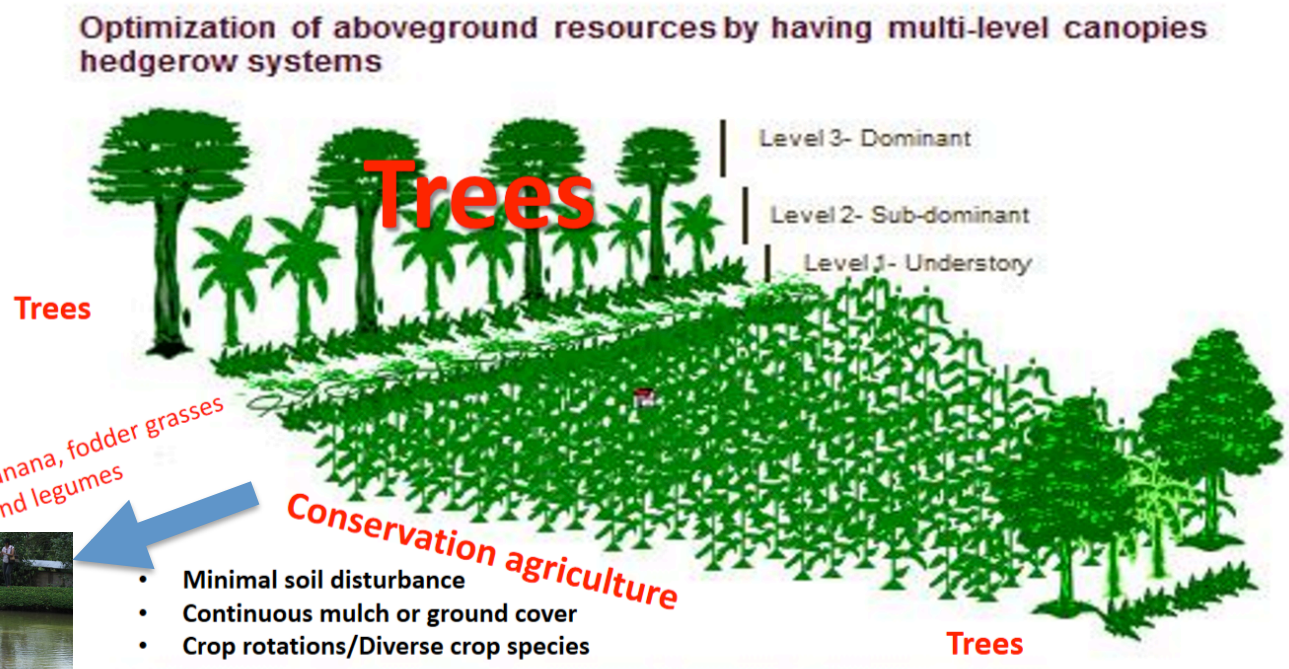
CONSERVATION AGRICULTURE WITH TREES

Proposed Solution



+ Rainwater Harvester

Conservation agriculture with trees (CAT) system as sloping lands management strategy

Diagram from Dr. Agustin Mercado

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TRANSFORMATION AFTER FIVE YEARS

SANREM- IL: Philippines site

2009

2014

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TRANSFORMATION AFTER FIVE YEARS

Encouraging

Success

Depressing

ANIMAL-BUILT RAINWATER HARVESTERS

Plow, Scoop and Dump

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CONSERVATION AGRICULTURE WITH DRIP IRRIGATION FOR VEGETABLES

Water from the pond was used to water vegetables below using drip irrigation

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TAKE HOME MESSAGE

- Alarming land degradation is occurring in the steep mountainous food producing regions of the Southeast that severely threatens food security—urgent solutions are needed to arrest this.

- Through 20 years of research in the Philippines, SANREM CRSP has developed Conservation Agriculture with Trees plus Rainwater Harvesting Technology as a very possible solution. Conservation agriculture with Trees + Rainwater Harvesting is a CMA that can be scaled up.

- Conservation agriculture plus drip irrigation sequesters carbon, provides drought resilience and increases yield. It is a CMA that can be scaled up.

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FEED THE FUTURE INNOVATION LAB
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