# Conservation Agriculture, Drip Irrigation and Rainwater Harvesting for Vegetable Production

Incentives and Markets for Vegetable Smallholders to Practice Labor, Water and Soil Saving Technologies in Cambodia and Nepal

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Phrase coined by Dr. Gurbinder Gill

Bookmark designed by Acel Sanguir











**Mendenhall Glacier** 

Hike

Micah: Addicted to sailing his hair turned blonde No girlfriend



# Grown Right

- Conserving Water
- Conserving Soil
- Conserving Biodiversity
- Lessening use of chemicals
- Intensifying cropping systems
- Increasing yield
- Improving vegetable quality

### Animal Built Rainwater Harvesters Banke, Nepal (Dr. Jun Mercado, iDE Nepal)





# Surkhet, Nepal (Dr. Jun Mercado, iDE Nepal)





### Honduras (Dr. Jun Mercado, iDE-Honduras, Horticulture Innovation Lab Center Julio Lopez Thanks - Zamorano University,



#### Water Savings - Nepal

- Average time spent irrigating in:
  - CA was 33 hours
  - Conventional 46 hours





## Soil conservation and enhancement of its quality by conservation agriculture with a 95% reduction in soil loss



# Weeds Cambodia 30 % less labor





Emergence of weed in conservation practice



Emergence of weed in conventional practice 9

# Nepal

- Conservation Agriculture:
  - Introduced May 2015



Mrs. Sabitri Timilsina said "Mulching practice is really good for weed management, really it is most helpful for small holder farmers like me. It has more benefits for us for income generation"

- Saved 60% of time due to less weeds
- > Used that time to manage another vegetable tunnel earning \$160 from it
- Practiced intensification by planting cauliflower before completing harvest of tomatoes



### Cambodia Sustainable Crop Intensification from two cycles per year to six cycles per year

Added Drip Irrigation + 1 cycle **Added Seedling Nursery** + 1 cycle

#### Added Seedlings Transplanting before harvesting No Tillage + 2 cycles

USAID

# Handled Right

Proper harvesting Prolong vegetable quality Clean and attractive packaging Timely and fast transport





Dr. Jate in 'coolbot' acti

Coolbot



**Pre-chiller** 

Horticulture Innovation Lab Regional Center for South Asia, Kasetsart University (<u>Thanks Dr.</u> <u>Poon</u>); and AVRDC–The World Vegetable Center (<u>Thanks Drs. Jun Acedo</u> and Borarin)





**Evaporative Cooler** 

#### Dr. Borarin and his team (Royal University of Agriculture) with Dr. Jun Acedo and his team (AVRDC)





Proudly Market vegetables in neighborhoods with Tuktukbot

# **Community Right** Savings in labor and its drudgery ▶ Inc Women's cooperative capitalization Business planning and marketing

## assistance

#### **Provide Capital:**

- Monies generated by payment of tanks will be invested in cooperative capitalization for low interest loans
- After project, tuktukbot and coolbot will be owned by the cooperative







#### tuktukbot

- Developed Business plans for:
- Individual farmers
  - \$430/year (100 m<sup>2</sup>)
- Cooperative marketing
  - \$16000/year for 50 farmers
  - Cooperative income:
  - 70% back to members
  - 20% increase in capitalization
  - 7% for salary of officers
  - 3% training



**BENG MEALEA VEGETABLES: GROWN RIGHT, HANDLED RIGHT & COMMUNITY RIGHT** 



- Beng Mealea CA team invites you to visit our table
- Beng Mealea CA team excited to host you in field trip tomorrow





HORTICULTURE INNOVATION LAB





