

Deep Dive Workshop

Energy-Food-Water-Climate Nexus: Renewable Energy Solutions for Low Carbon and Resilient Agri-Food Systems

Friday, 16 June | 9:00 a.m.– 12:30 p.m. (GMT+8)

Organized by:





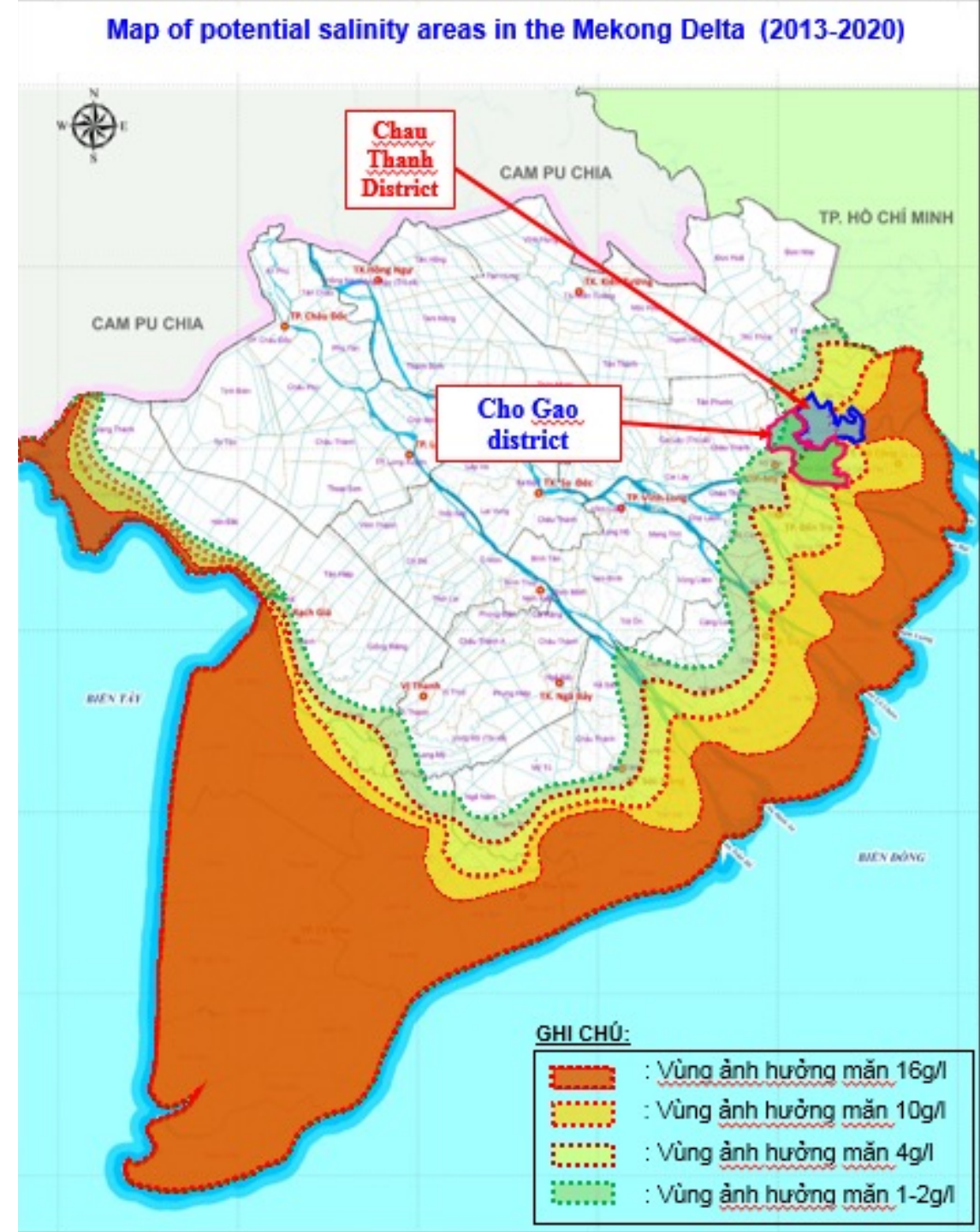
**Greater Mekong
Subregion
Sustainable
Agriculture & Food
Security Program**

Energy-Water-Food-Climate Nexus in the GMS: A Case Study from Vietnam's Mekong Delta

(Dragon Fruit Farming as a Climate Adaptation Strategy to
Cope with Increasing Salinity and Water Stress)

Lower Mekong Delta Challenges

- ❑ Saltwater intrusion
- ❑ Drought
- ❑ Land subsidence
- ❑ Acid sulfate soil
- ❑ Hydropower dam development
- ❑ Change of crop regime

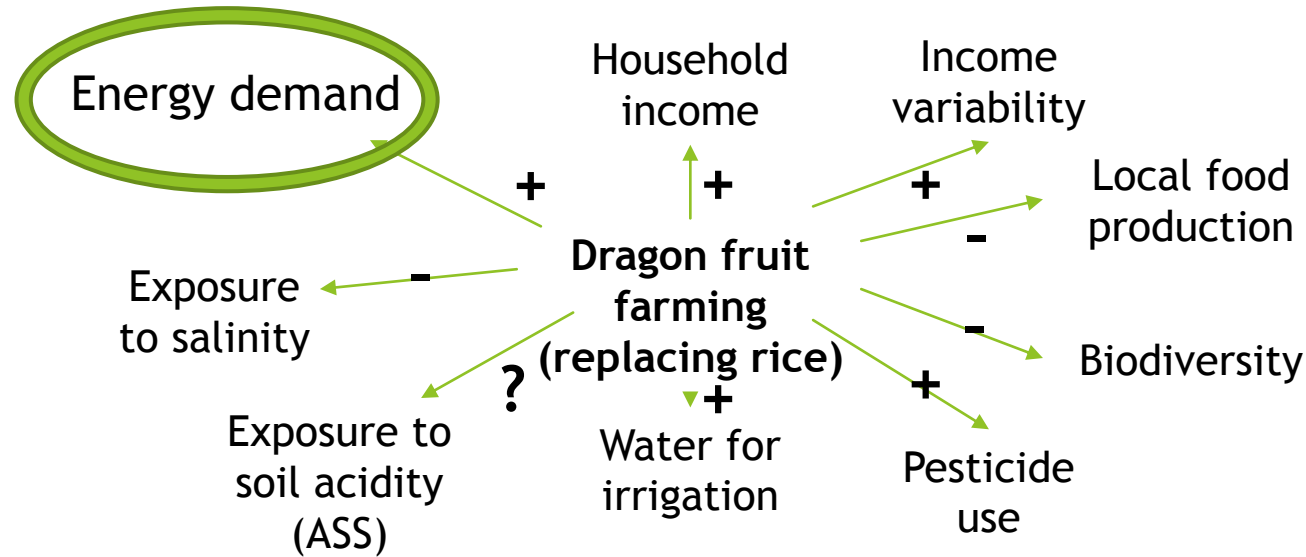


Rapid Energy-Water-Food-Climate Nexus assessment for Dragon fruit farming

1st order impacts

Energy Security

Food security

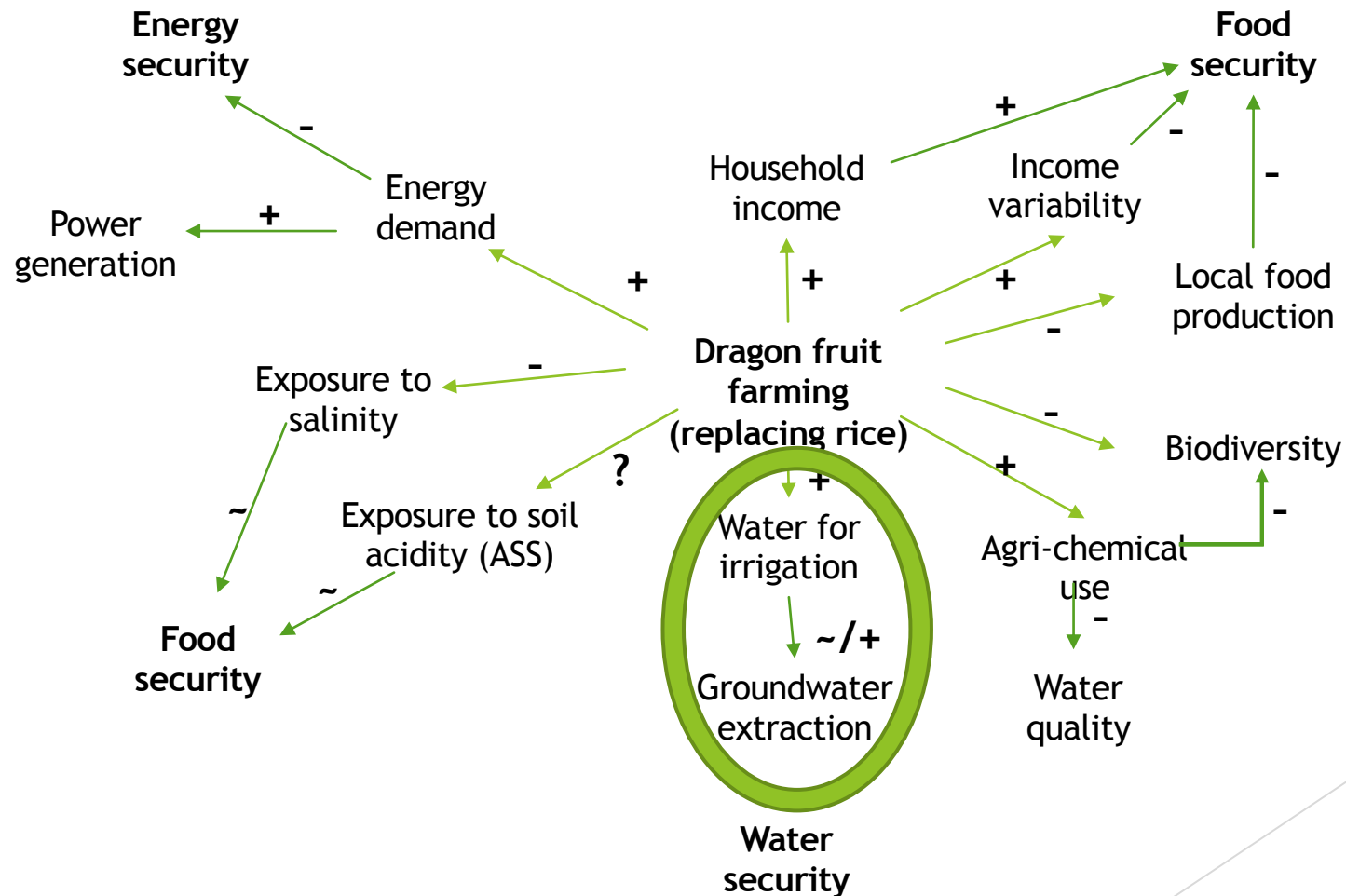


Climate security

Water security

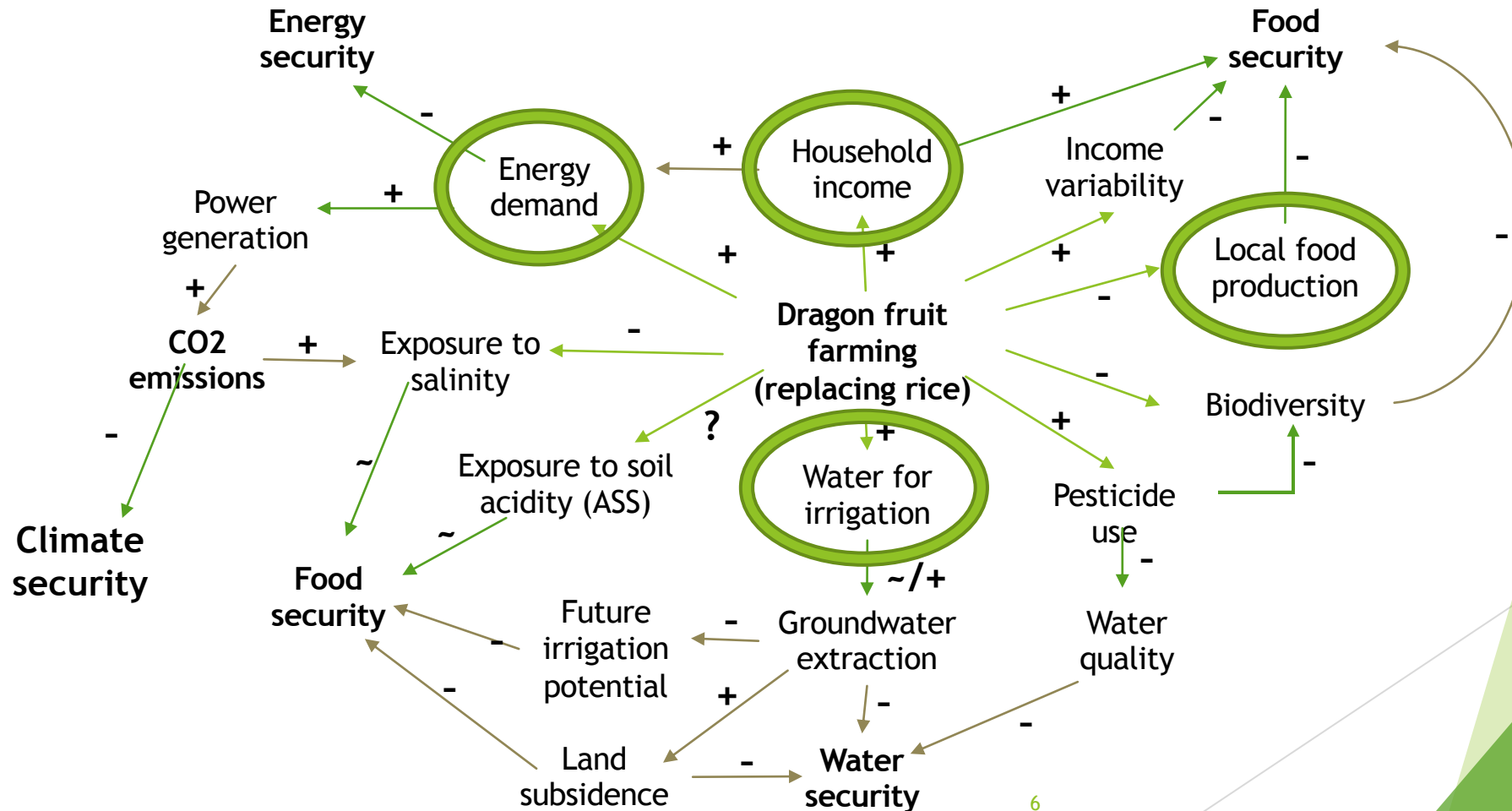
Rapid Energy-Water-Food-Climate Nexus assessment for Dragon fruit farming

Second order impacts



Rapid Energy-Water-Food-Climate Nexus assessment for Dragon fruit farming

3rd order impacts



Managing Energy-Water-Food-Climate Nexus

Assessment for dragon fruit farming

<ul style="list-style-type: none"> ➤ Rice: 4,19 million ha ➤ Fruit : 366,000 ha 	Rice (average)	Dragon fruit Traditional irrigation Cho Gao - Tien Gian	Dragon fruit Automated irrigation Chau Thanh - Long An	Dragon fruit LED + Improved irrigation
Energy consumption (KWh/ha/year)	9 - 16	18,223 ↑	21,542 ↑	Target: 2,500 - 4,300 ?
Water consumption (m3/ha/crop)	2,400 - 4,000	6,300 ↑	535 ↓	Target: <450 ?
Crop productivity (tons/year/ha)	5.8	30 ↑	30 →	min stable ?
Farm income (mVND/ha/year)	9 - 47	253 ↑	811 ↑	min +20% ?
GHG emissions (kg CO2e/ha)	860-1700	430-700 ↓	320-580 ↓	240-300 ?
Vulnerability index (1-10)	8	7 ↓	5 ↓	3 ?

A customized, multi-platform traceability system...



Adaptive to different business models

Digitized traceability systems that can accommodate different business models and products (such as fresh fresh dragon fruit and processed dragon fruit products)



GS1 Global Data Standards

Using this technology can increase farmer and agribusiness and supply chain efficiency, and visibility



Flexible system configuration

A flexible system allows businesses/regulators to add data points and stages.

