

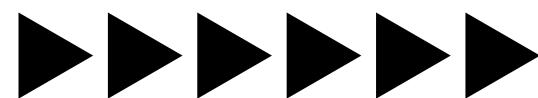


Transforming Tropical Farming:

EXCELLING IN CLIMATE-ADAPTIVE DURAIN CULTIVATION FOR PRIME QUALITY AND SUSTAINABILITY

**Workshop for the 13 th Call of the e-ASIA program: Agriculture
16-17 January, 2023**

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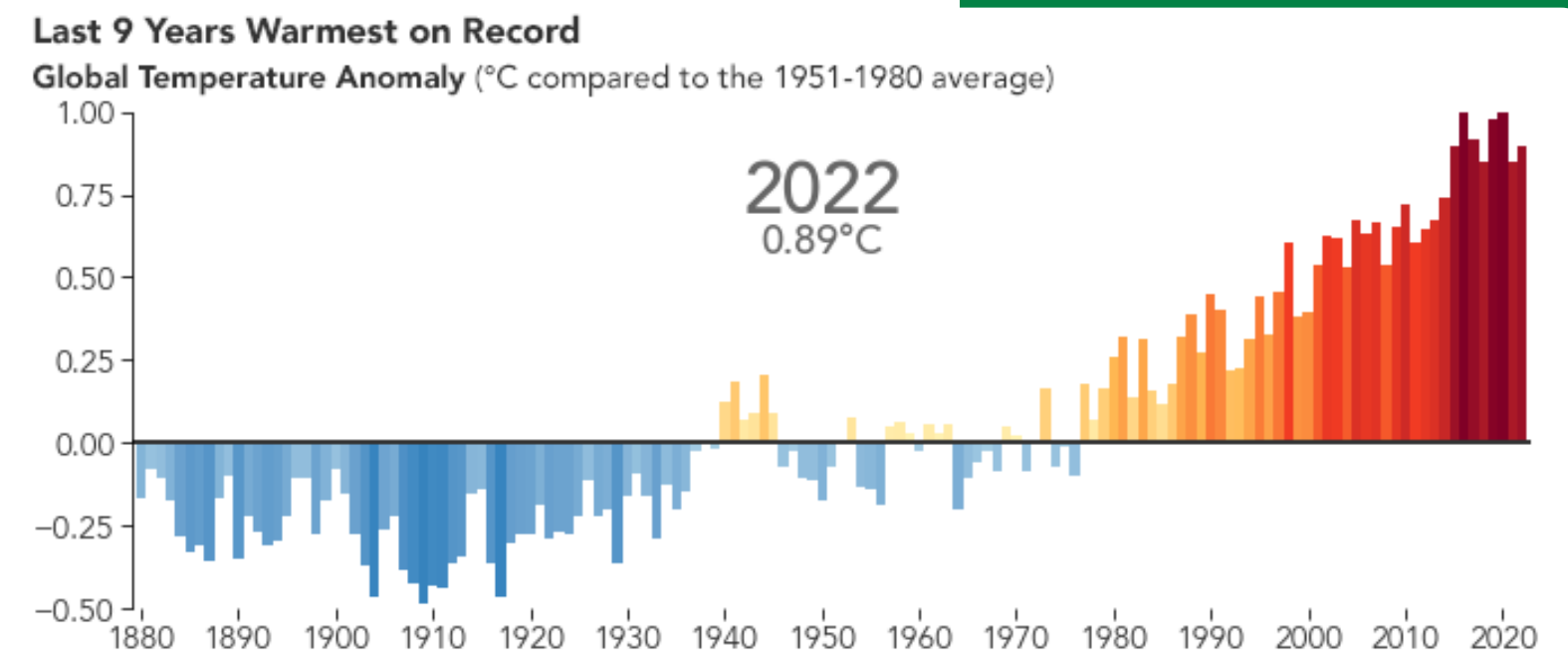
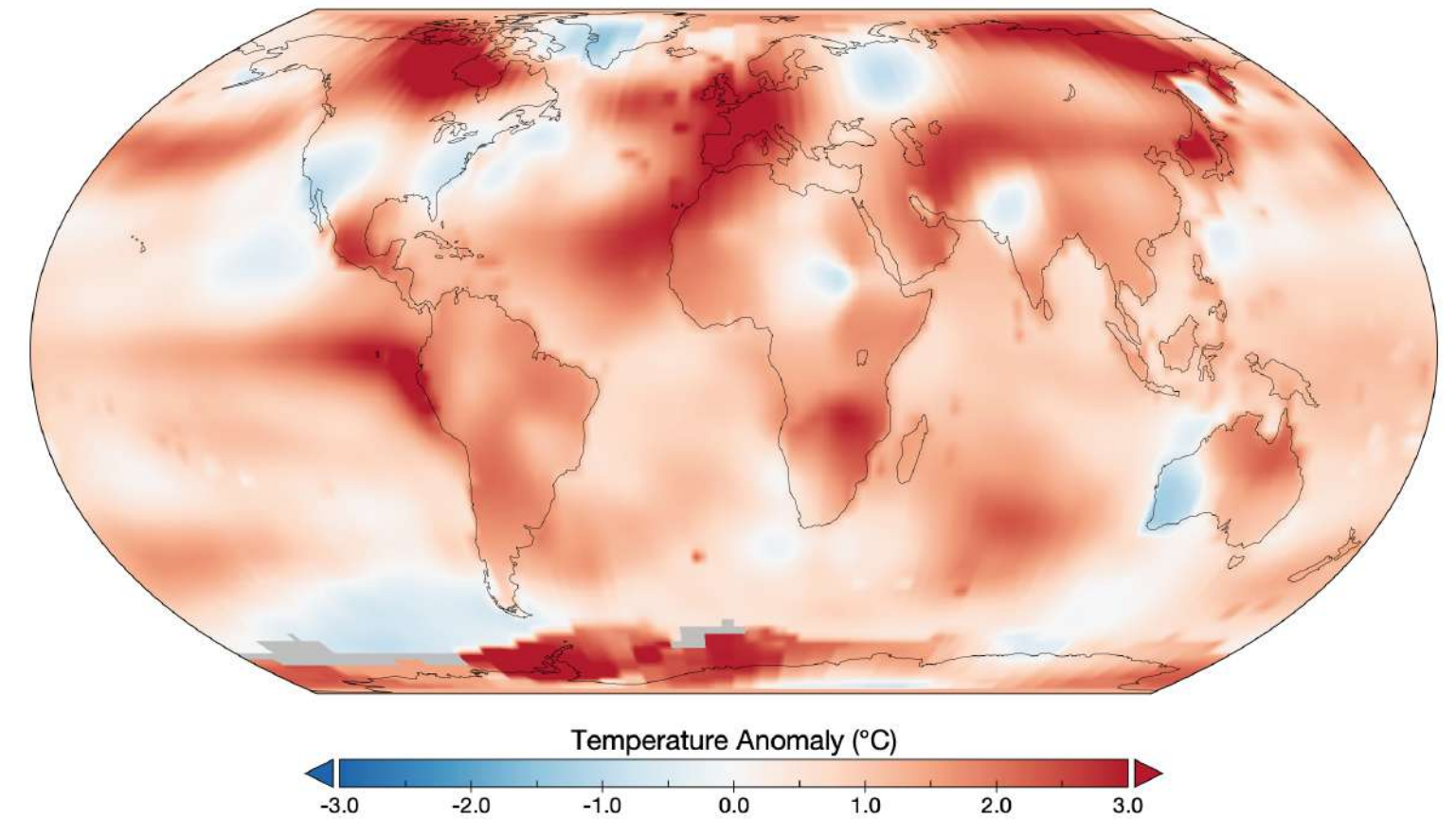


The Global Challenge: Climate Change and Agriculture

- A changing climate: A threat to global food security.
- Tropical regions: At the frontline of climate impact
- Rising temperatures and changing precipitation patterns.
- Increased frequency of extreme weather events.
- Shifts in agricultural zones and crop viability.



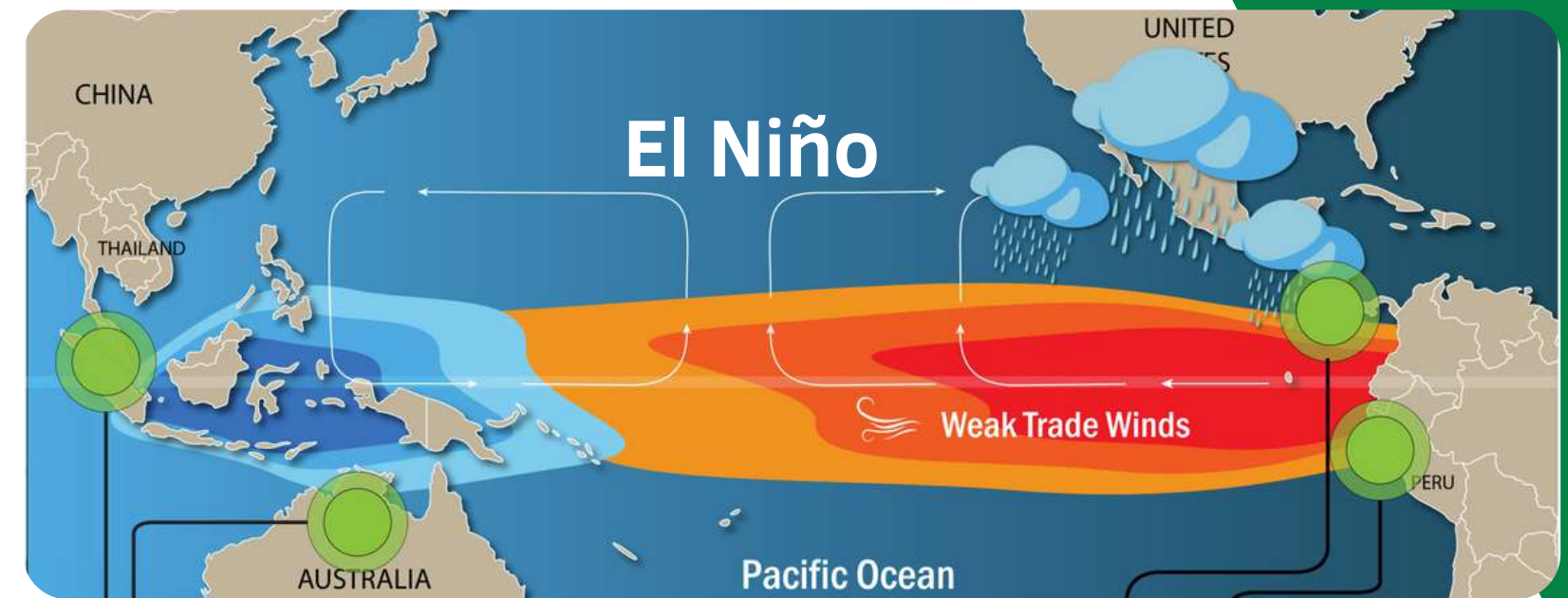
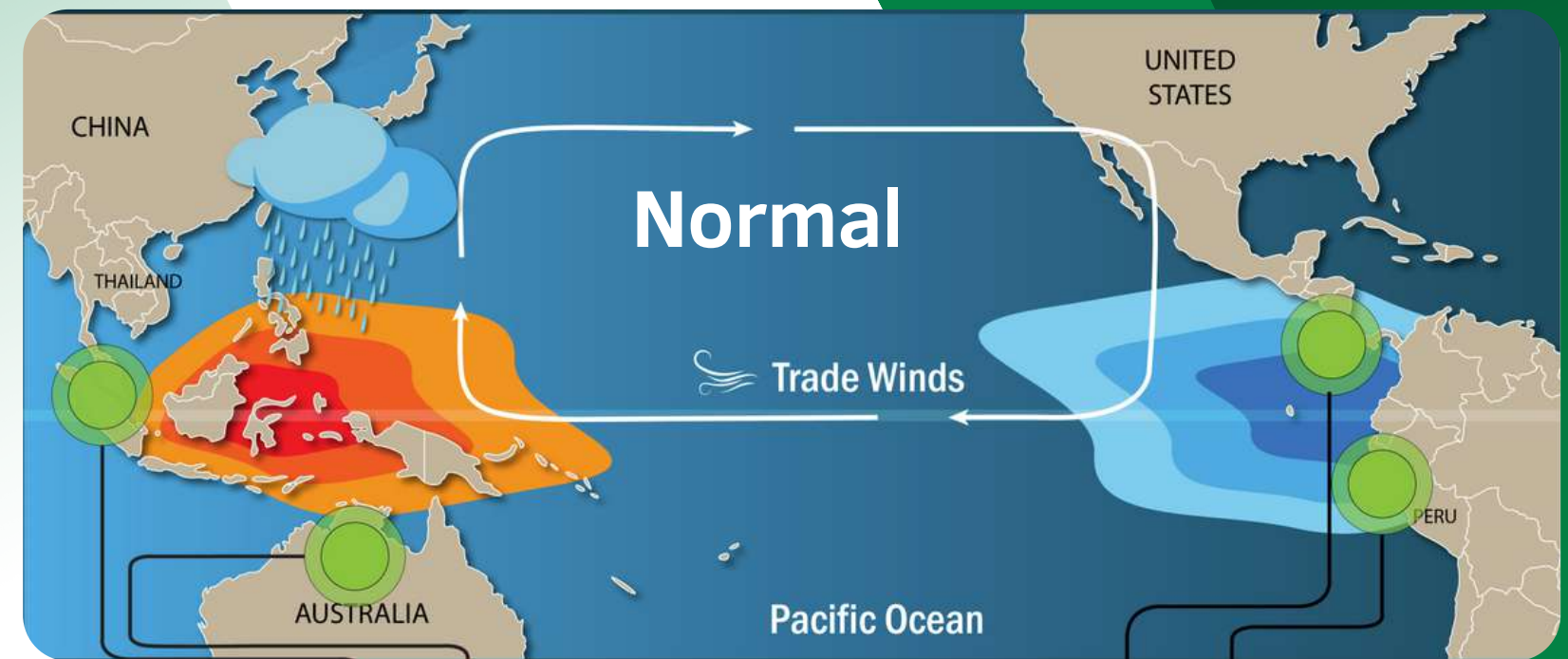
June 2023 Global Temperature
NASA GISTEMP (1951-1980 baseline)





ENSO: El Niño and La Niña: Nature's Unpredictable Patterns

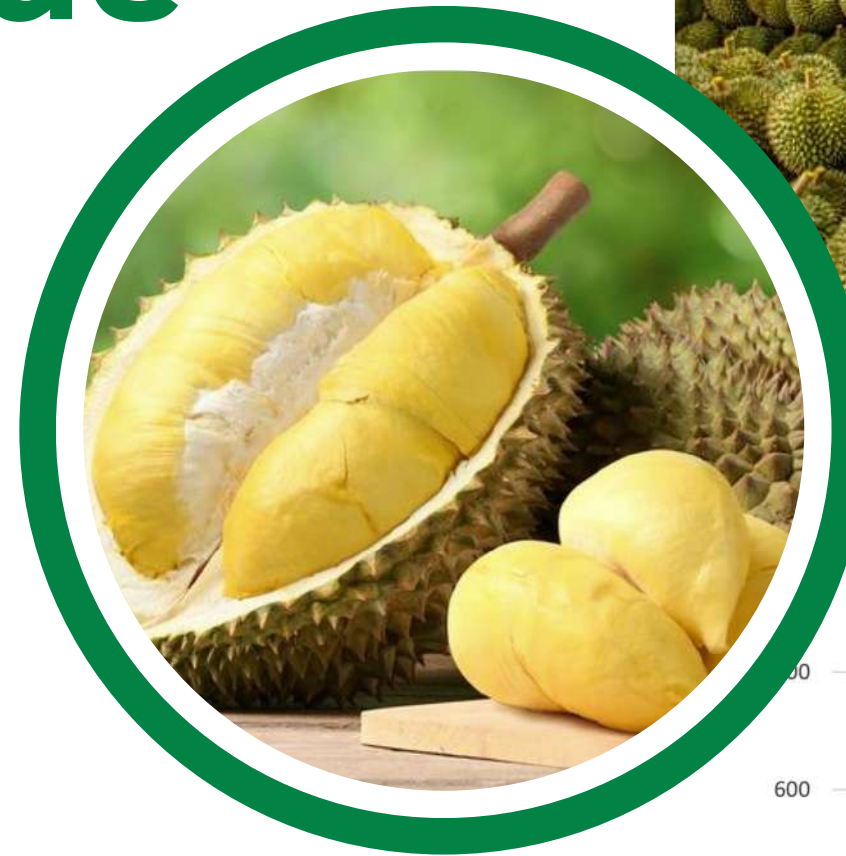
- El Niño: A global climatic phenomenon causing warmer ocean temperatures.
- La Niña: Its contrasting impact with cooler ocean temperatures.
- The cyclical nature of these phenomena and their unpredictability.



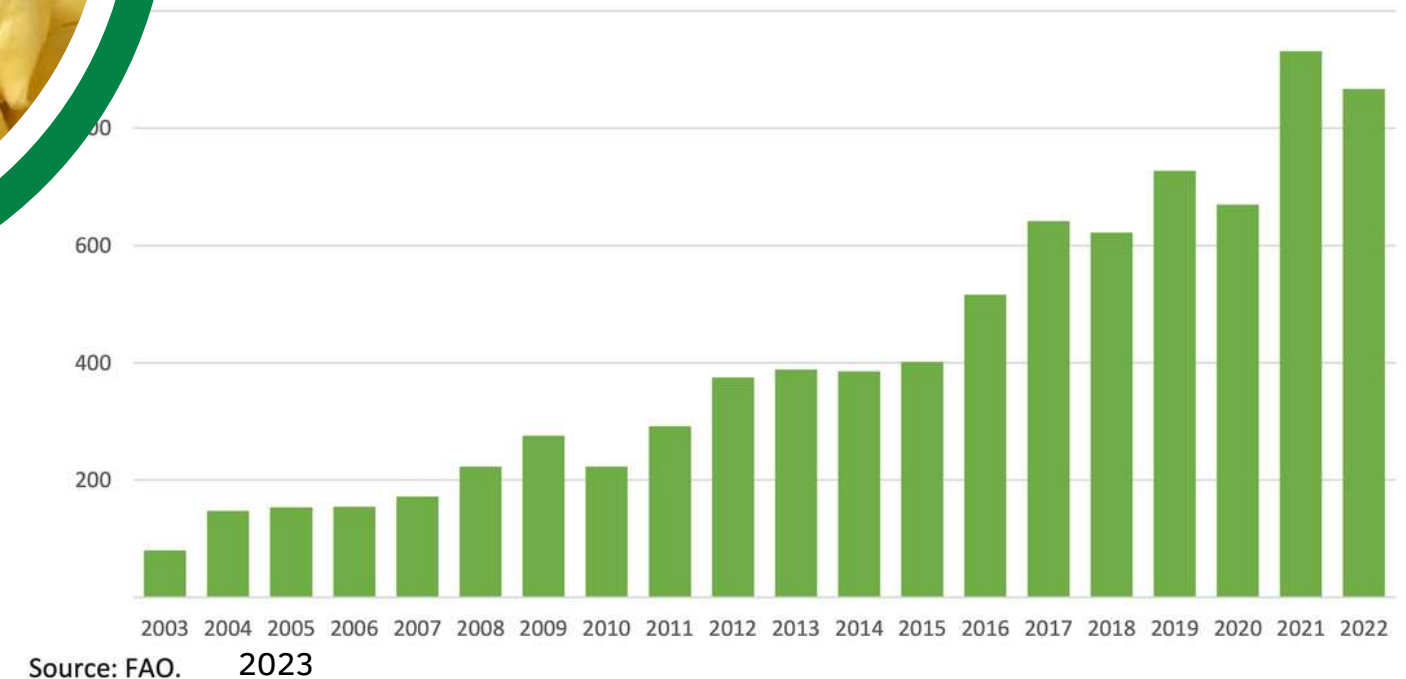


Durian: The King of Fruits and Thailand's Pride

- Durians: A symbol of Thai culture and a key economic driver.
- The economic powerhouse: Over 30 billion US dollars in annual exports.
- Thailand's durian industry: A global leader.
- Key contributor to Thailand's economy
- Cultural and economic importance in Southeast Asia.



Durian: global aggregate export volumes, 2003–2022, thousand tonnes





When Climate Challenges Cultivation

- Ideal climate for durians: A narrow window of temperature and humidity.
- The impact of climate change: Altered rain patterns and temperature shifts.
- Consequences for durian cultivation: Unpredictable seasons and crop stress.
- Case examples: Regions in Thailand affected by climate variability.
- Farmer testimonies: Personal stories of adapting to climate change.



If durian is cultivated for commercial purposes in the current manner, which changes the ecosystem, it will be sensitive to transformations due to climate change.





The Ripple Effect: From Climate to Crop Yields

- Significant yield reduction: Over 50% in some Thai regions."
- Quality concerns: Root and stem rot, unripe fruits, and other issues.
- Economic impact: Losses for farmers and the national economy.
- The human cost: Impact on smallholder farmers and communities.
- Adapting to change: The need for innovative solutions."

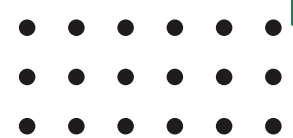




Innovation in Action: The Reborn Root Ecosystem

- RRE: Revolutionizing durian cultivation in the face of climate change.
- Promoting rapid flower bud formation in response to low temperatures.
- Facilitating multiple flowering cycles, adaptable to varying climates.
- The science behind RRE: How it works and its benefits."
- Success stories: Examples of RRE implementation and results.

"The RRE system differs from the traditional mulching method to covering the base of a tree, which requires four key components: humus, appropriate microorganisms, oxygen, and organic dry matter. "



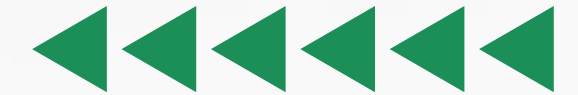


RRE: A Game-Changer for Durian Farmers

- Enhanced pollination success, even in adverse weather conditions."
- Long-term solution for disease resistance and healthier crops."
- Boosting yields and improving fruit quality.
- Economic benefits: Increased profitability for farmers.
- Sustainability: Contributing to more resilient agricultural practices.



"Farmers in more than 17 provinces in all 4 regions of Thailand have implemented it until production has been successful. and reduce durian production costs"



Sustainable Benefits of RRE



ADVA 1

Provides permanent protection against root rot and stem rot. A biome is formed in the root system, containing humus and chelate substances.

ADVA 2

The tree remains robust, even when fruits are left hanging for over 120 days. Economizes the use of fertilizers and plant nutrients.

ADVA 3

Prevents the rise of underground saltwater to the roots. Adapt and yield results in a variable environment.

ADVA 4

The floating root system rapidly produces new leaves, completing 3 shoots within one year.

ADVA 5

Adapt and yield results in a variable environment. Does not drop fruit during the new leaf growth phase.

ADVA 6

The flesh is normally smooth, without the issue of incomplete pulp developing cover seed.



Conclusion and Future Works




- RRE: A cornerstone for sustainable and resilient durian farming.
- In addition to durians, the RRE can be excellently applied to the production of tropical fruits and vegetables."Vision for the future: Expanding RRE's impact beyond Thailand.
- The global significance of adapting agriculture to climate change.
- Beyond Thailand: Potential for global application of RRE."
- "Empowering farmers: Education and technology transfer

Embracing Change: The Future of Durian Production





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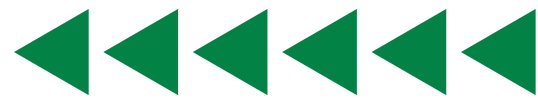


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Thank You
For Your Attention

