
ASEAN
DATA SCIENCE
EXPLORERS
SAP
ASEAN FOUNDATION
Deforestation
Known, learn and cooperate to fix the problem to achieve SDGs13 goal by 2035
13 CLIMATE ACTION
Team Just The Two Of Us
LiS
LITTLE STAR SCHOOL


‘’ deforestation needs to stop, it is destroying
habitats and releasing more carbon in atmosphere’’

Objective

Reduce
- Reduce deforestation in Laos and ASEAN country

Promote
- Promote sustainable agriculture practices

Increase
- Increase food product while minimizing land use

Develop
- Develop a scalable and replicable model for hydroponic farming

“Understanding Deforestation”

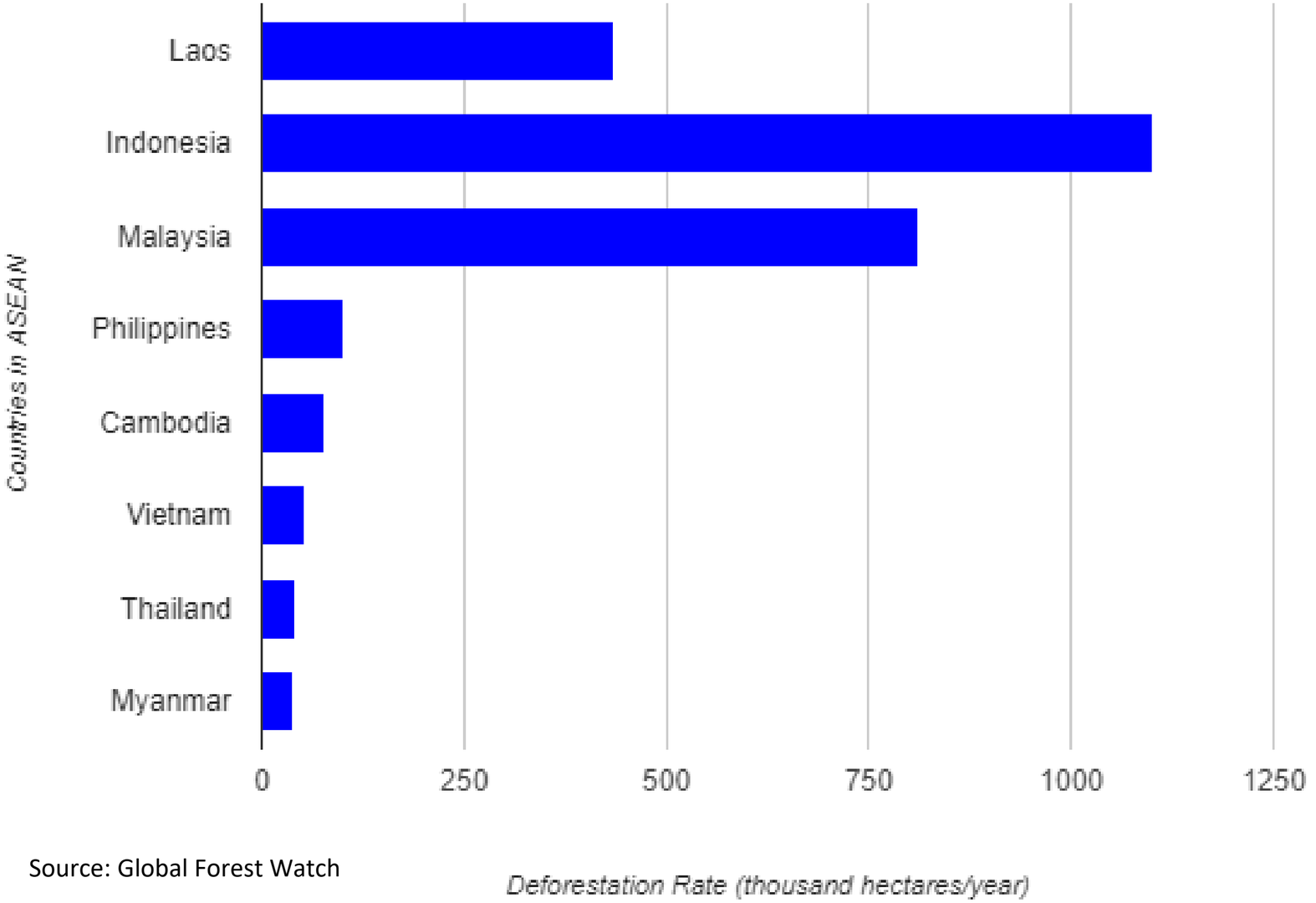
We will take you to explore more why deforestation is the big problem

What is Deforestation?

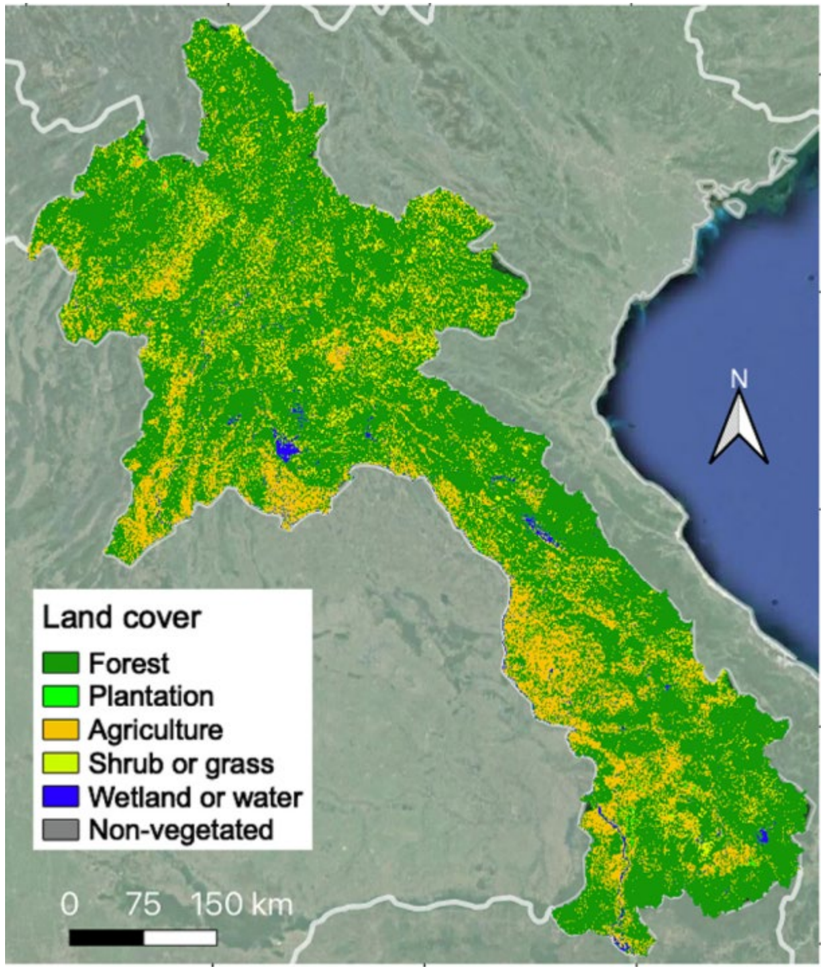
Large scale-removal or clearing forest

- Agriculture
- Urban Development
- Logging & timber trade

Average Annual Deforestation Rates in Laos and ASEAN (2001-2021)



Source: Global Forest Watch



Laos Forest Cover and Land Use Map

Cause of deforestation in Laos

Source: Forestry Strategy 2022

Agriculture

Estimated forest area lost to agriculture(%) between 2010 and 2020

Country	Estimated Forest Area Lost (%)
Laos	8.5
Indonesia	12.2
Malaysia	7.8
Thailand	5.4
Vietnam	4.2
Cambodia	10.1

Urban development

Clearing trees for :

Infrastructure the buildings

Infrastructure housing

Project for develop

Logging & Timber Trade

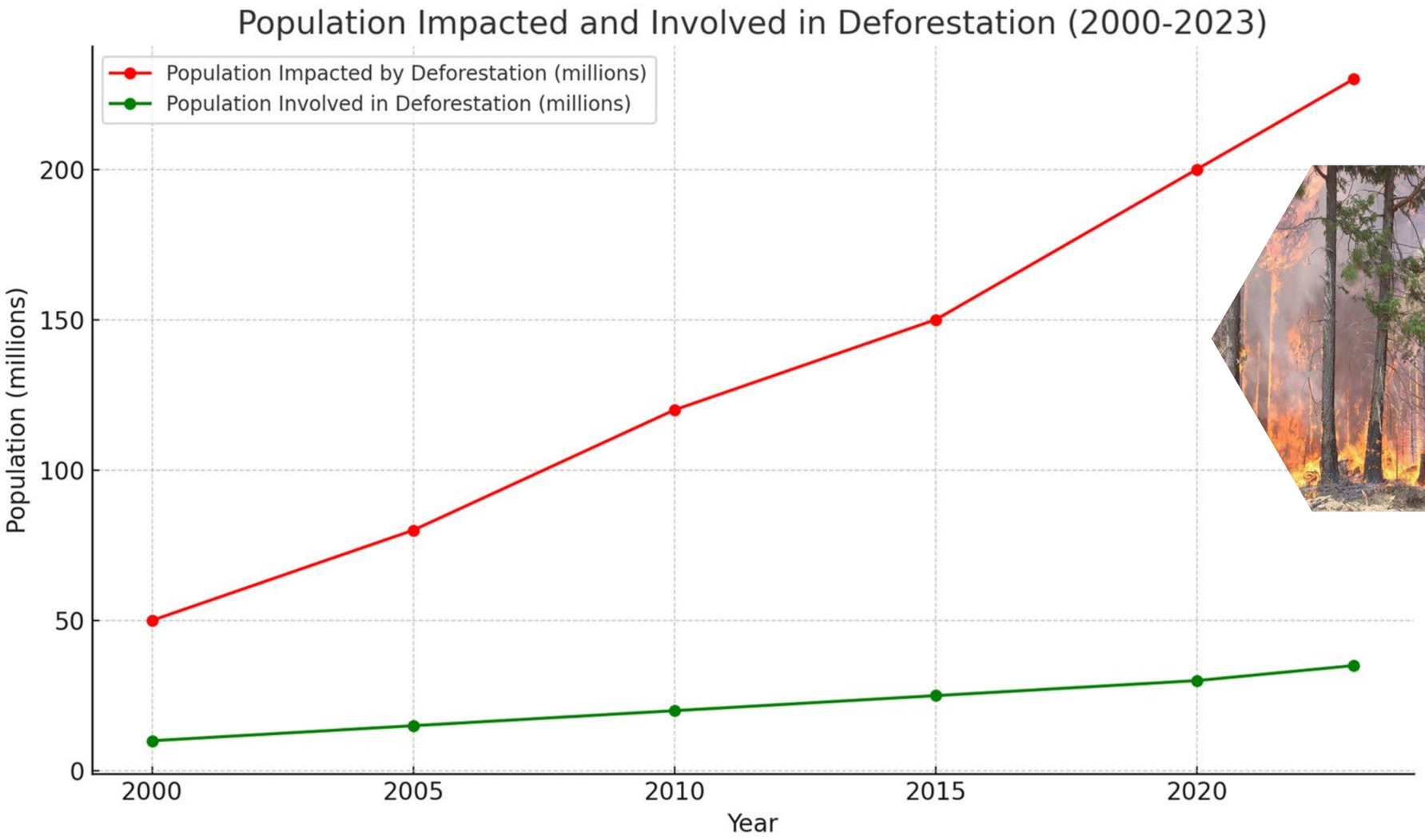
Effect of deforestation

Habitat loss

Disruption of Eco-systems

Contribute to climate change due to reduced carbon absorption

Effects of deforestation



Source: Global Forest Watch, WorldBank

What’s happening in Laos ?

Sources: thestar.com

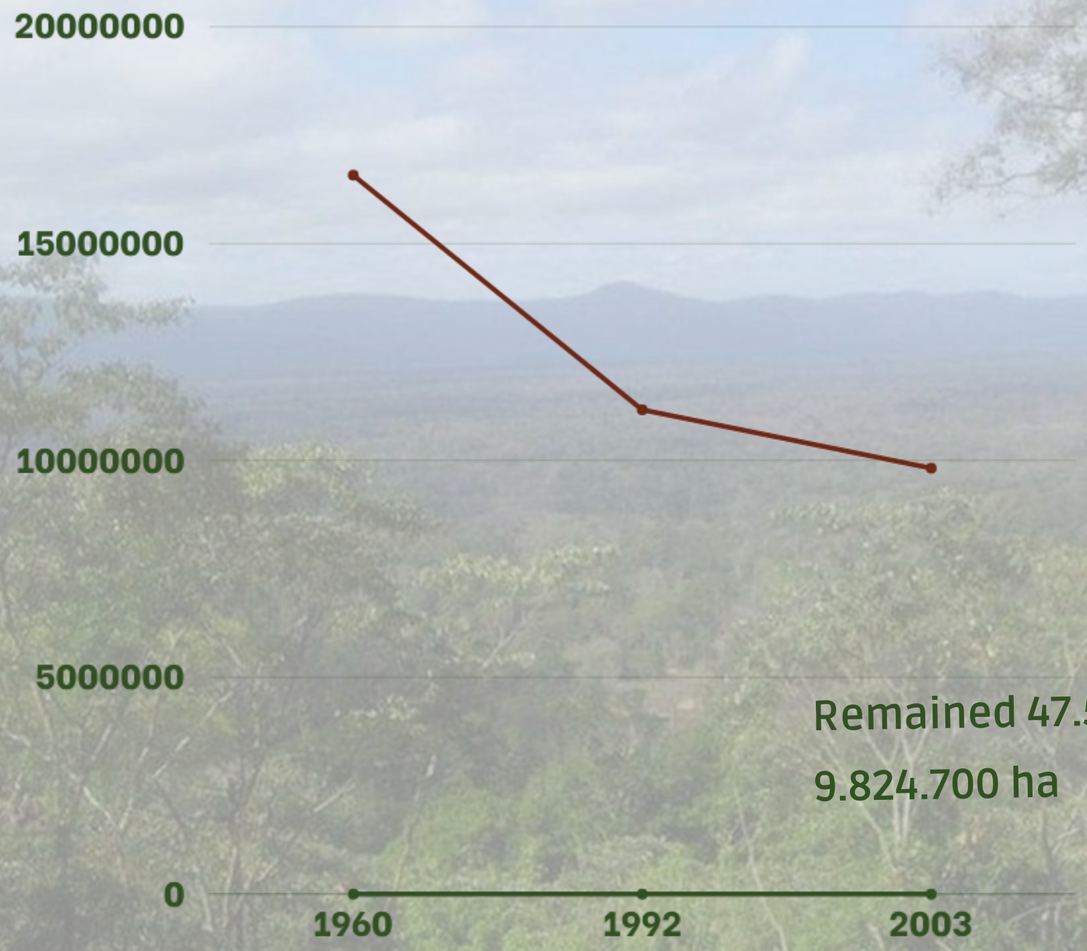
Example

Vientiane – Fires caused by farmers burning scrubland in preparation for crop planting across Laos have made authorities struggling to extinguish the fires as the hot weather continues.

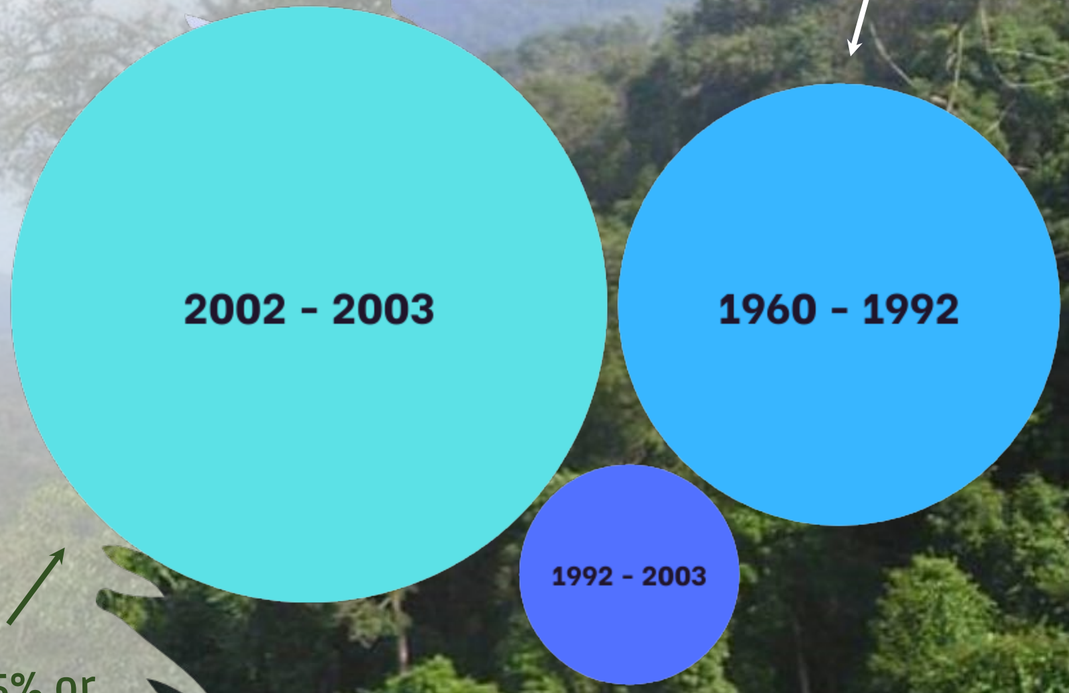
A forest fire is reported at Phou Pha Nang mountain in Sangthong district, Vientiane. (Photo source: thestar.com)

The fires have burned over 100 hectares of bamboo woodland, causing severe smoke pollution, though no houses or farmland have been affected, said Mr. Phongsavanh.

Situation forest in Laos



Within 32 Years, tree area was destroyed 23% or 5.408.000 ha



Remained 47.5% or 9.824.700 ha

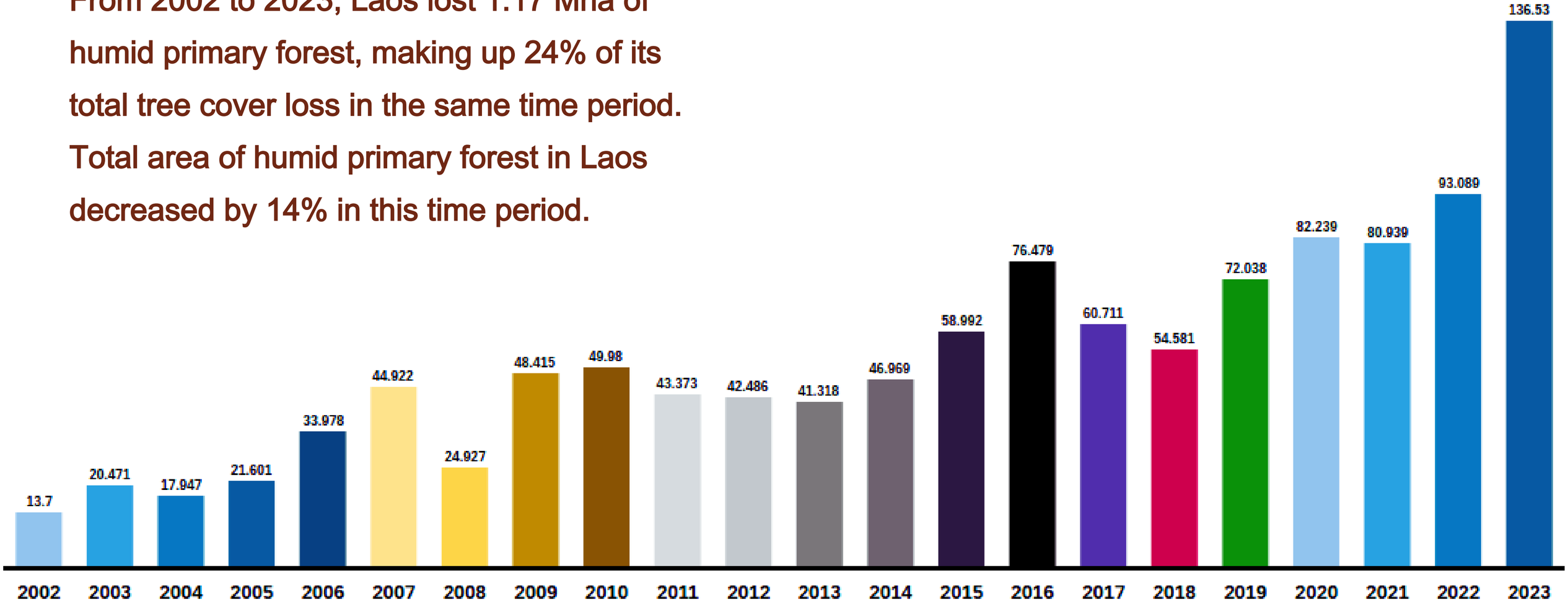
Within 11 Years forests are decreasing 5.5% or 1.343.300 ha

Source: Forestry Strategy 2022

Source: Global Forest Watch

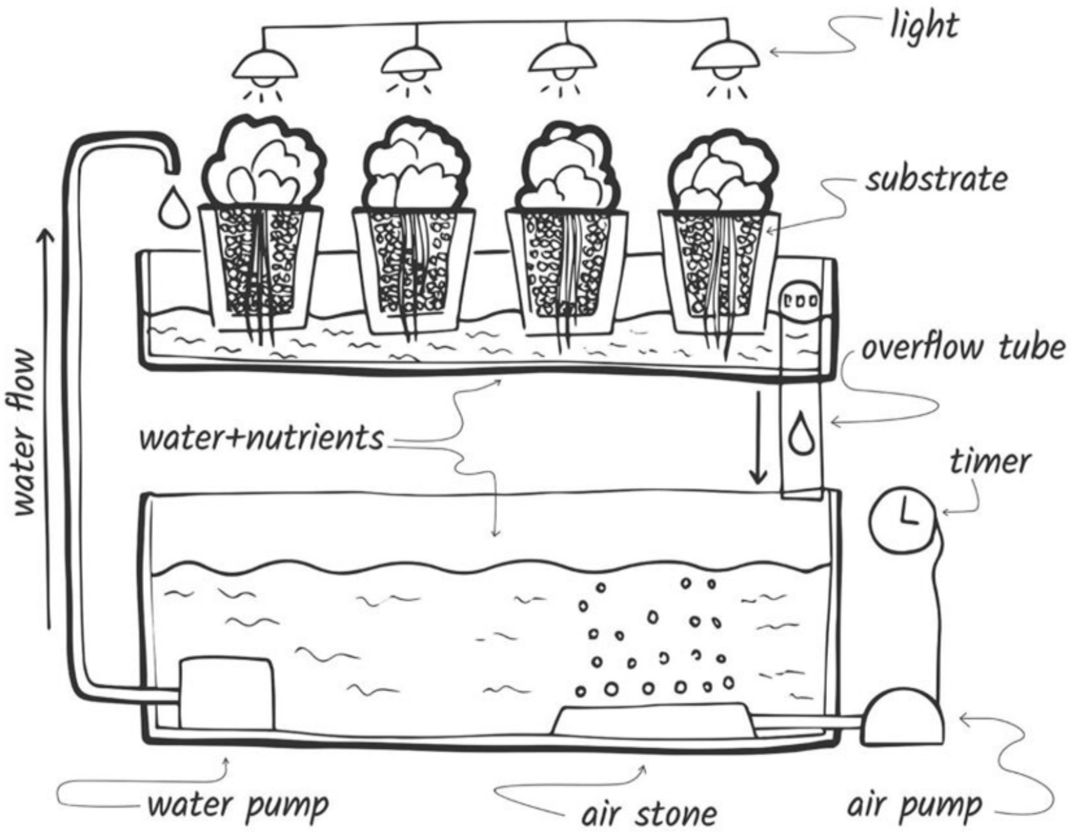
Primary Forest Loss in Laos

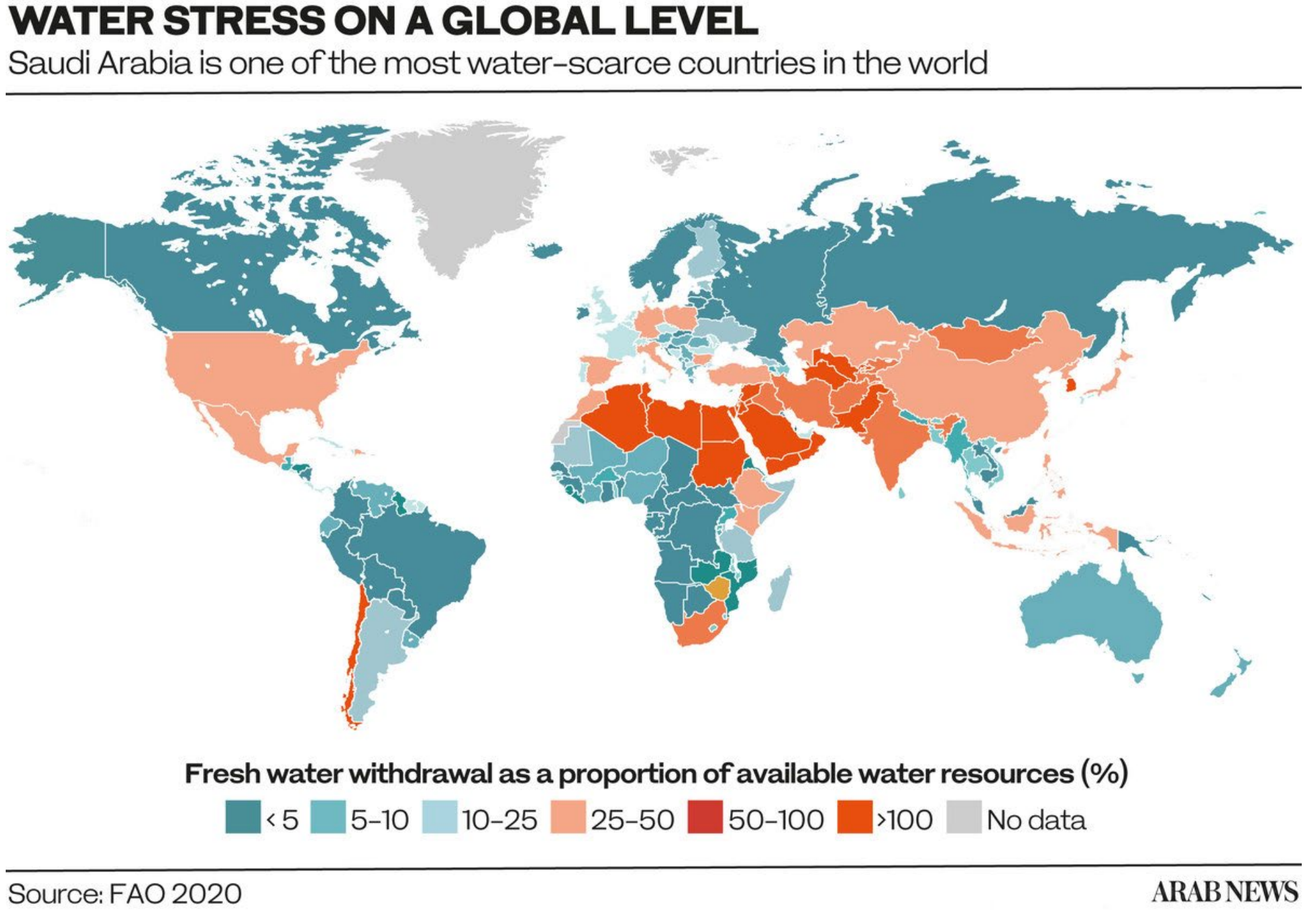
From 2002 to 2023, Laos lost 1.17 Mha of humid primary forest, making up 24% of its total tree cover loss in the same time period. Total area of humid primary forest in Laos decreased by 14% in this time period.



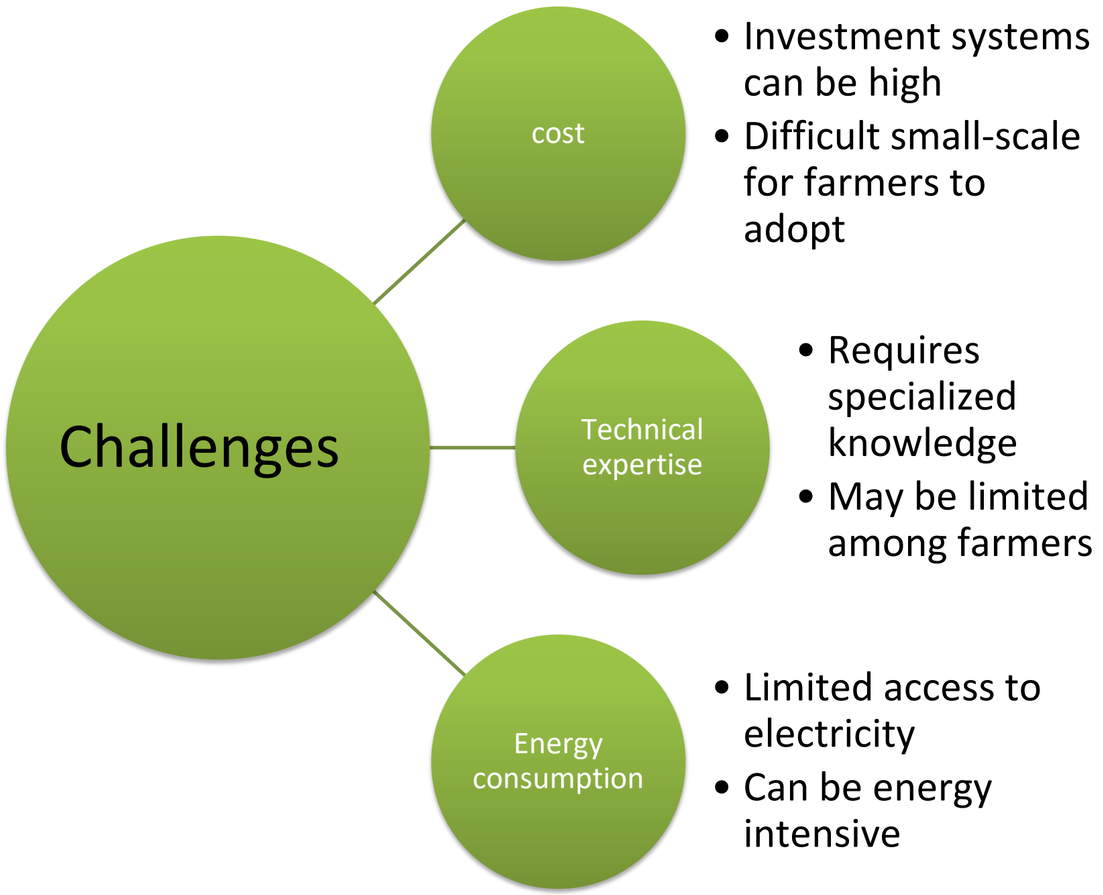
Solutions Overview :

Hydroponic: A Sustainable alternative





Challenges and Considerations for Hydroponic Implementation



- Investment systems can be high
- Difficult small-scale for farmers to adopt

- Requires specialized knowledge
- May be limited among farmers

- Limited access to electricity
- Can be energy intensive

Different Types of Hydroponic:

Nutrient film technique (NFT)

Ebb and Flow systems

Wick systems

Control and Monitoring

- Automated nutrient management and pH control
- Plant growth monitoring and phenotyping
- Real-time monitoring and adjustment of water and nutrient levels

- Automated material handling and logistics
- Integration with computer vision and decision support systems
- Integration with robotics and automation systems

Example :

Hydroponic in Singapore

A-go-gro system (aluminum towers)

Resource Efficiency

Production Capacity

Cost

Application solution

HydroSustain Application

- **Hydro:** This refers to water, a vital element in hydroponic farming.
- **Sustain:** To maintain or support forest over a long period of time

HydroSustain

Hydroponic System Design and Planning

Organic vegetables

Command Robotic Systems

Donate

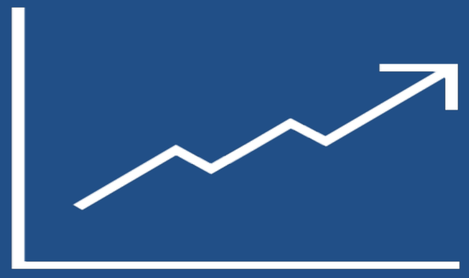
Be part of saving our planet

Monitoring and Data Analysis

Community

Data & Education of Hydroponic

Design & Planning



Monitoring &
Data Analysis

pH
6.4

EC
1.56

Humidity
40

CF
17.4

TDS
870

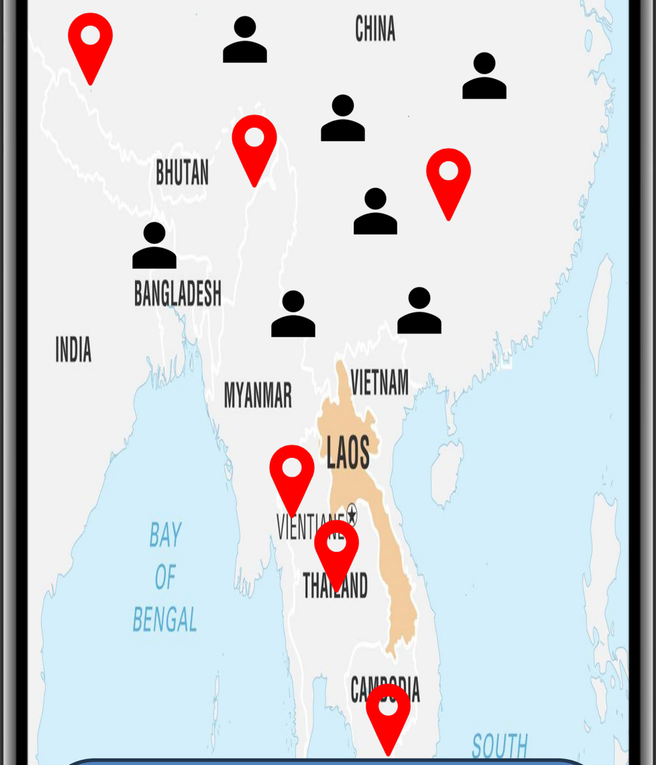
Back Light
ON

HydroSustain


droSustain
Account
Notification
About us
Membership
Our Partners
roponic
matoes
Report
Command Robotic
Connect with your robotic
Hold
HydroSustain

HydroSustain

Community Engagement



Group Chat

Hi! What's Hydroponic?

It is plant without soil,..

Organic vegetable

Organic vegetable from Happy Farm

5$/Kg

Lettuce organic from Namthip Farm

3$/KG

Process

2024 - 2025

- Project Initiation & Social Network Development.
- Seek funding for app development
- Pilot project to test App system
- Get advice from environment expert

2025 - 2027

- Project &HydroSustain launching
- Cooperation with relevant partner in Laos
- Organize Hydroponic Workshops & Forest Awareness Activities
- Donation project to be published in rural area & tool necessary

2027 - 2030

- HydroSustain and system enhancement
- Connection with relevant ASEAN Departments
- Consistently publish knowledge of Environment on Social
- AI-Powered Predictive Analytics of Hydroponics

2030 - 2035

- Widespread adoption of hydroponics across ASEAN countries.
- Collaboration with international organizations
- Technological advancements in hydroponic

Conclusion

HydroSustain

Environment

Economic

Social

Target Partners and Sponsors

Ministry of Agriculture and forestry

United Nations

Makerbox Laos

ASEAN

World Wildlife Fund

Econox Laos

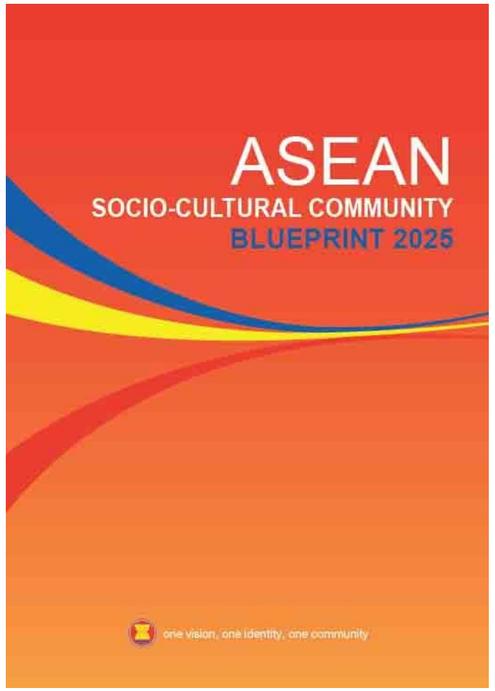
Forest Stewardship Council

Increased food security: By promoting efficient hydroponic farming methods, HydroSustain can help increase food production, especially in areas with limited arable land or water resources. This can contribute to reducing hunger and food insecurity.

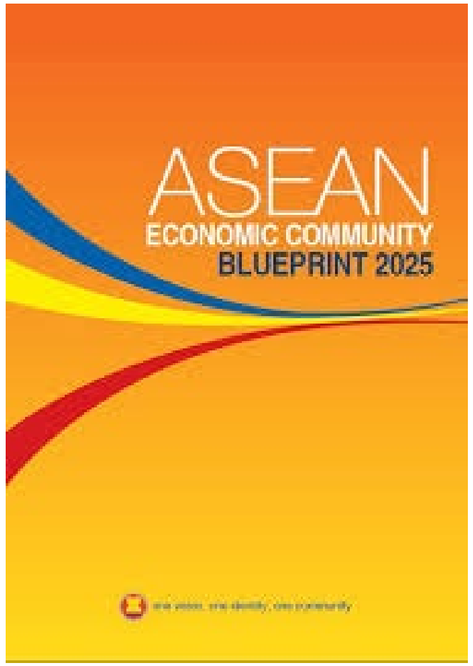
Water conservation: Hydroponic systems often use significantly less water compared to traditional agriculture, conserving water resources and reducing pressure on water supplies.

- **Reduced deforestation:** By providing an alternative to traditional land-based agriculture, HydroSustain can help reduce deforestation and the associated carbon emissions.
- **Lower carbon footprint:** Hydroponic systems often have a lower carbon footprint compared to traditional agriculture due to reduced transportation distances and lower energy consumption.

Sustainable practices: HydroSustain encourages sustainable farming practices, reducing the environmental impact of agriculture and promoting responsible consumption of agricultural products.



- **Food security:** Increased access to fresh, nutritious produce can improve food security, particularly in urban areas.
- **Community empowerment:** Hydroponic initiatives can empower communities by providing opportunities for participation and ownership.
- **Education and skills development:** Hydroponic projects can provide educational opportunities and develop new skills for local populations.
- **Social cohesion:** Collaborative efforts in hydroponic farming can strengthen social bonds and community cohesion.



- **Job creation:** Hydroponic farming can create new job opportunities in various sectors, including agriculture, technology, and research.
- **Rural development:** Hydroponics can be a viable economic activity for rural communities, providing alternative income sources and reducing reliance on traditional agriculture.
- **Export potential:** High-quality hydroponic produce can be exported to generate foreign exchange and contribute to economic growth.
- **Innovation and entrepreneurship:** Hydroponics can foster innovation and entrepreneurship by encouraging the development of new technologies and business models.

"Together, we can protect our planet's future. Let's take action now to stop deforestation, preserve our forests, and ensure a sustainable world for the upcoming generation"

Presented by:

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Just The Two Of Us Team

Thank you