



# Agriculture Modernization in Sri Lanka by Adopting Vertical Farming

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# Background



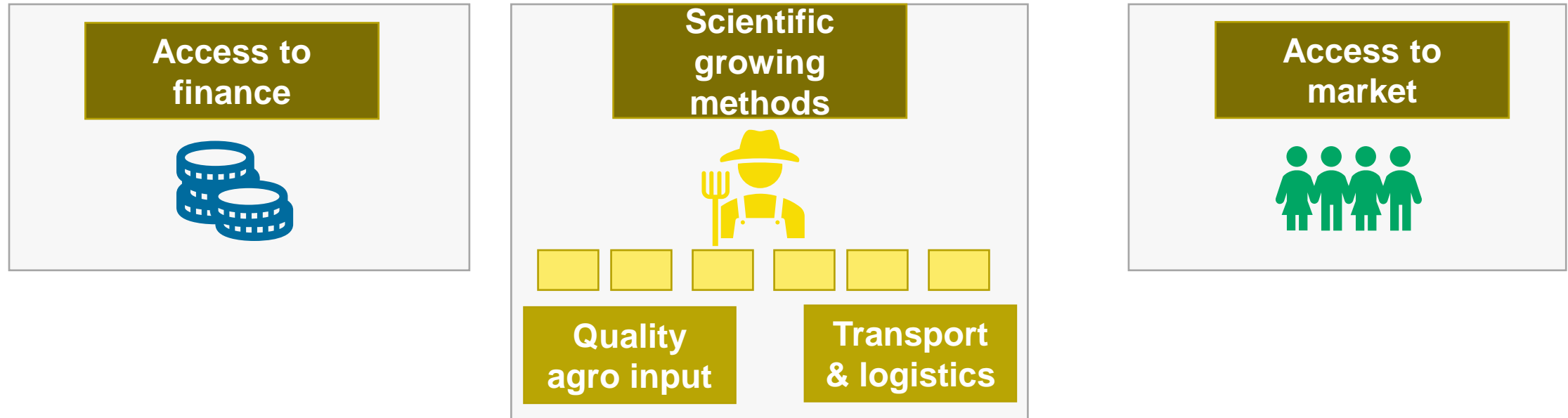
## Status-quo & Issues : Agriculture Sector in Sri Lanka

- a. Agriculture: One of the main source of GDP, 70% AFF workers in rural area => Core industry of the country
- b. Economic crisis : Need for digital innovation applying the smart technologies and data analytics
- c. Low post-harvest practices, information asymmetry, limited access to the agriculture inputs
- d. Regulated use of agricultural inputs: seeds, soil, chemical & pesticides (“Organic farming”, 2021)
- e. Climate change: Drought(2016), flood(2017) caused severe damage on crops

# Background

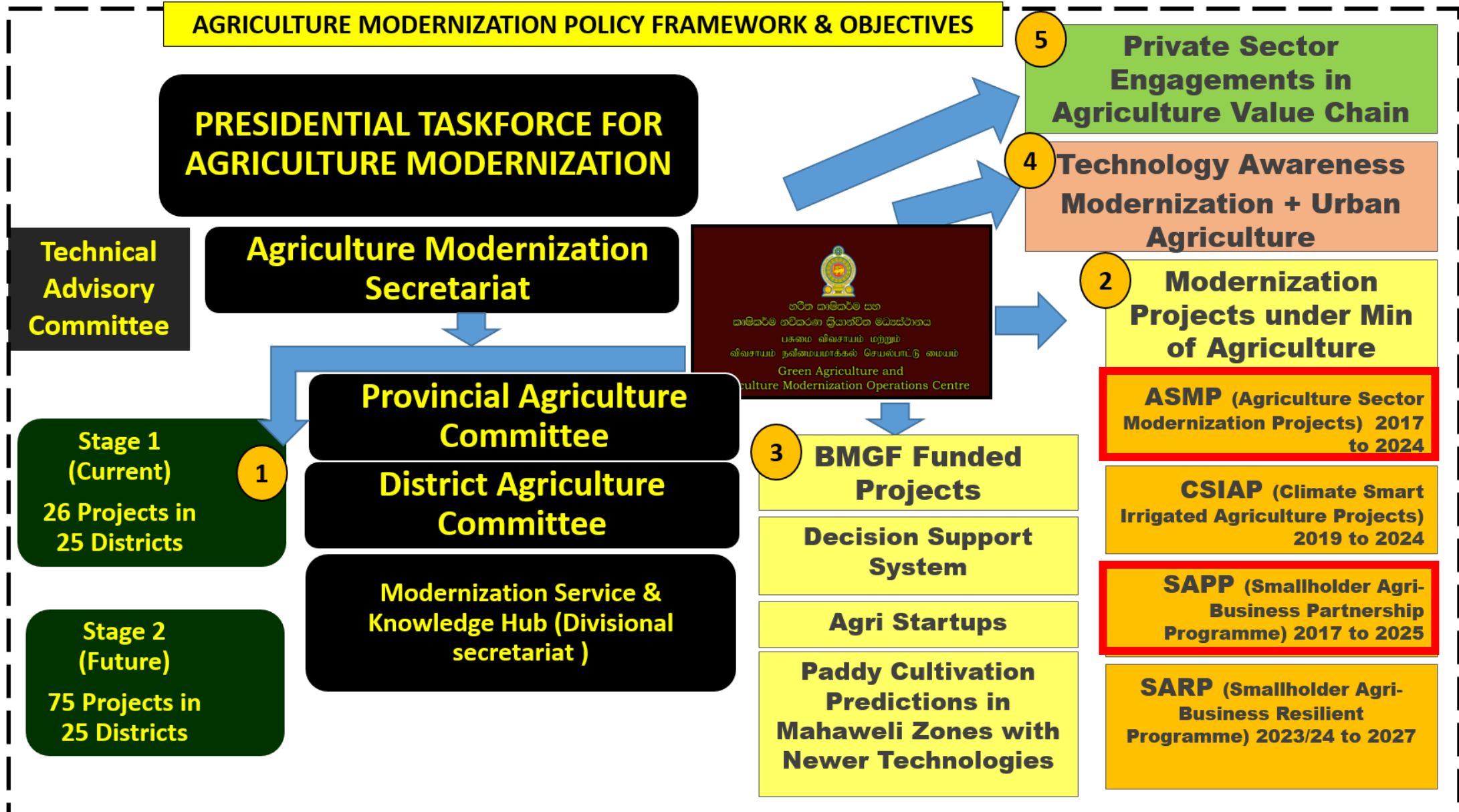


## 3 pain points of a typical farmer in Sri Lanka

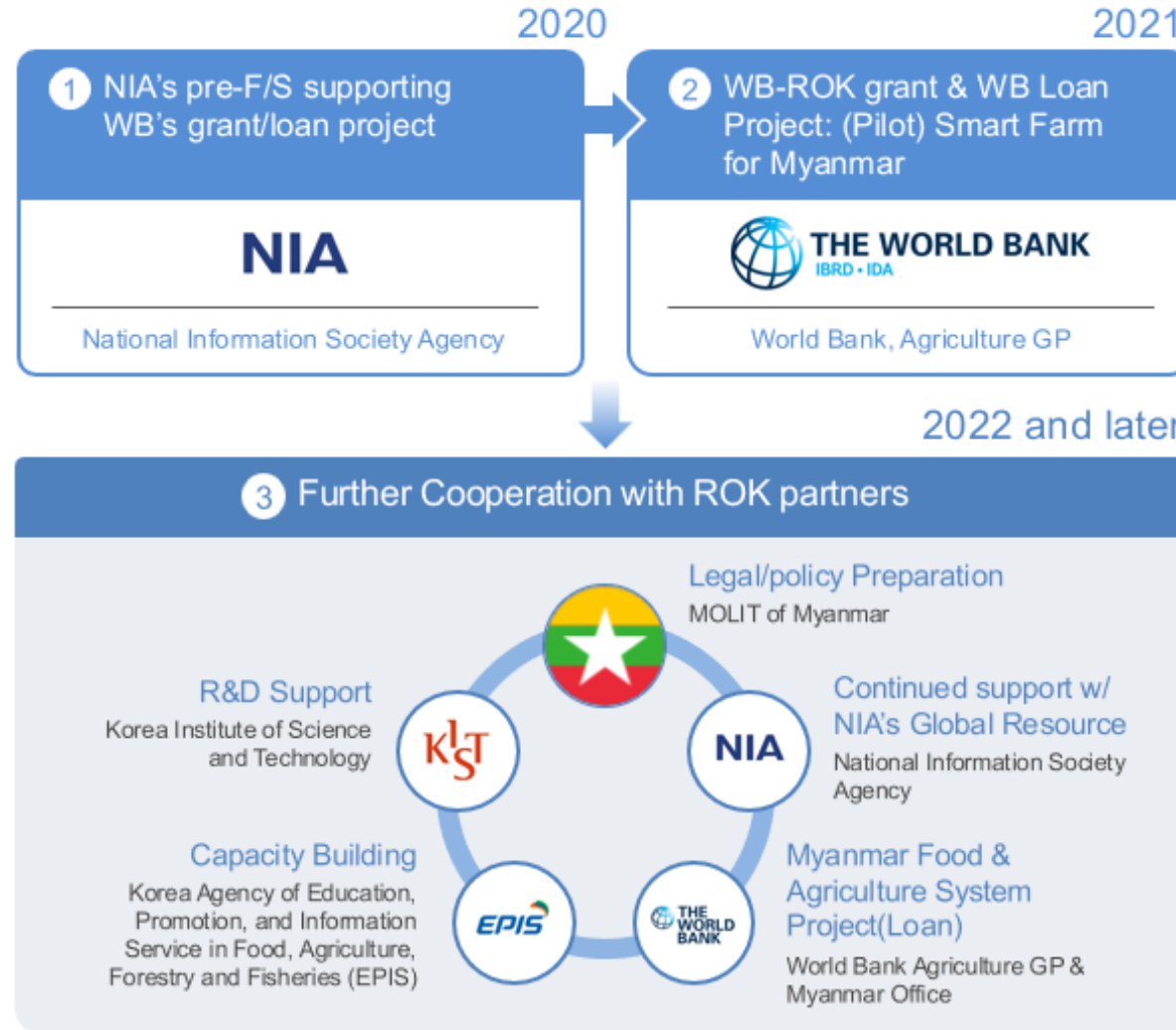
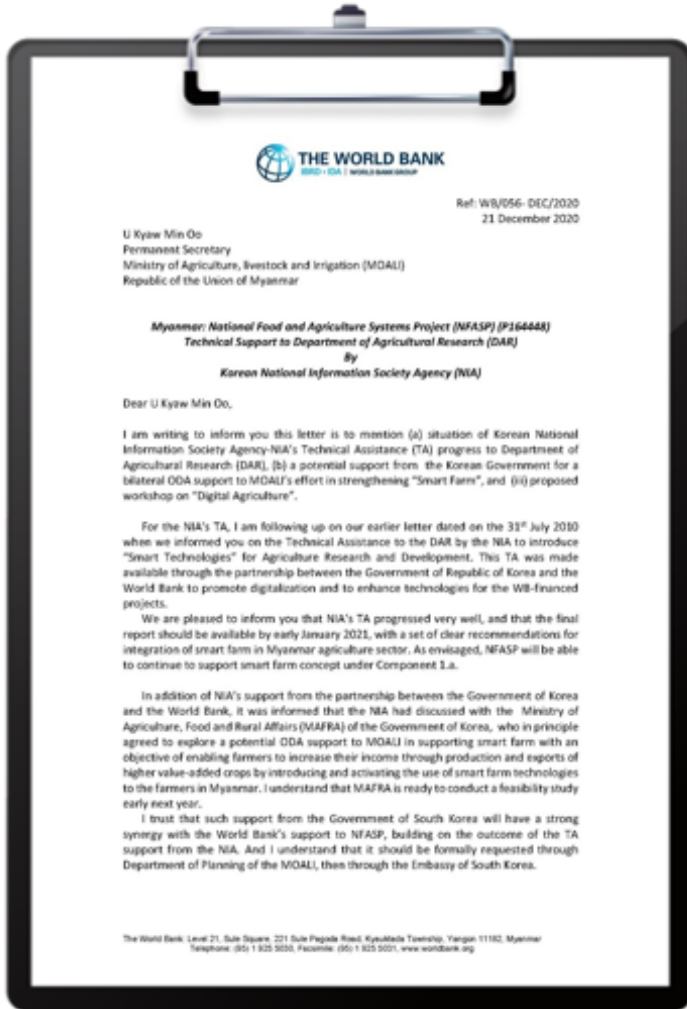


**The outcome of the Agriculture Modernization is to address all these main pain points of farmers**

# Background



# Previous work with the WB in ag sector



Previous case in Myanmar for adopting CSA

# Our Approach & Contribution



- a. TA Program funded by Ministry of Science and ICT(MSIT) of Korea, NIA
  - 2018-2019 : Pre-F/S for adopting smart farm
  
- b. Linking to IFAD operation, SAPP, for building a pilot smart farm
  - 2019-2021 : PPP project, co-funded by IFAD
  
- c. MoU
  - MASL, NIA, Private Partners (JAGRO(SL)-ASK(KR)) signed on MoU
  
- d. B2B Partnership : 10 ha strawberry farm in Nuwara Eliya
  - Expanding a smart farm /w vertical grow tech. at the JAGRO(SL)'s farm
  
- e. Inclusive Development : additional ODA funding,
  - Planned KOICA IBS Program with partners

# Our Approach & Contribution



## NIA-MASL Joint TA

## Design & Build (Pilot)

### Action Plan Report

Establishing Smart Model Farm and  
Agri Technology Park in Sri Lanka

November, 2019

SHINHAN Globe



**Action Plan  
Report on  
Establishing  
Smart Model Farm  
and  
Agri Technology  
Park in Sri Lanka  
(Nov. 2019)**

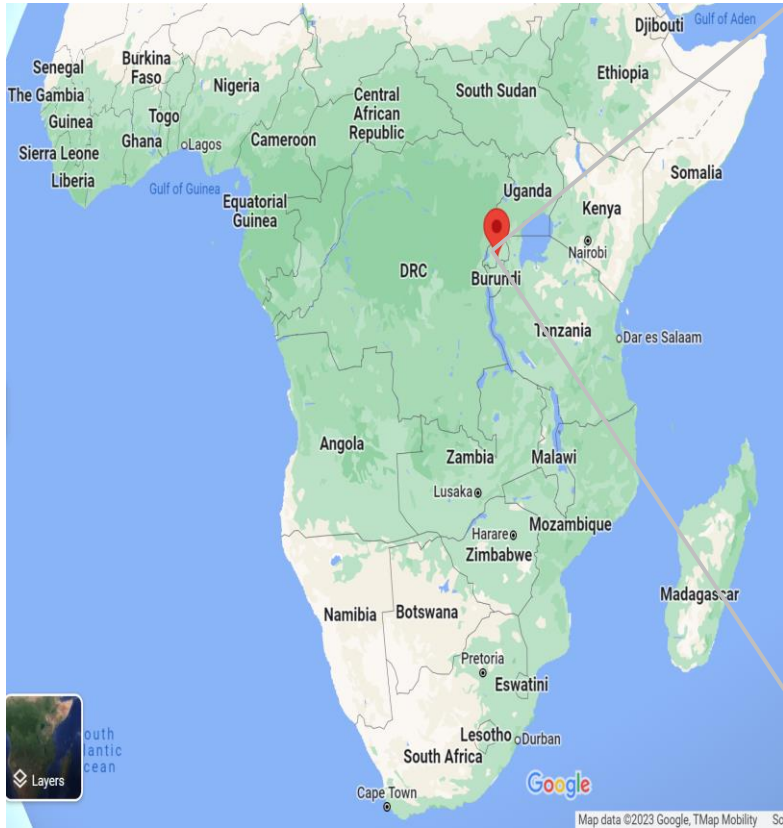
**MOA  
(linked to IFAD SAPP)  
&  
Supply Contract  
(Jan. 2020)**

**Producing High Value Crop  
in Sri Lanka  
(Currently operating)**

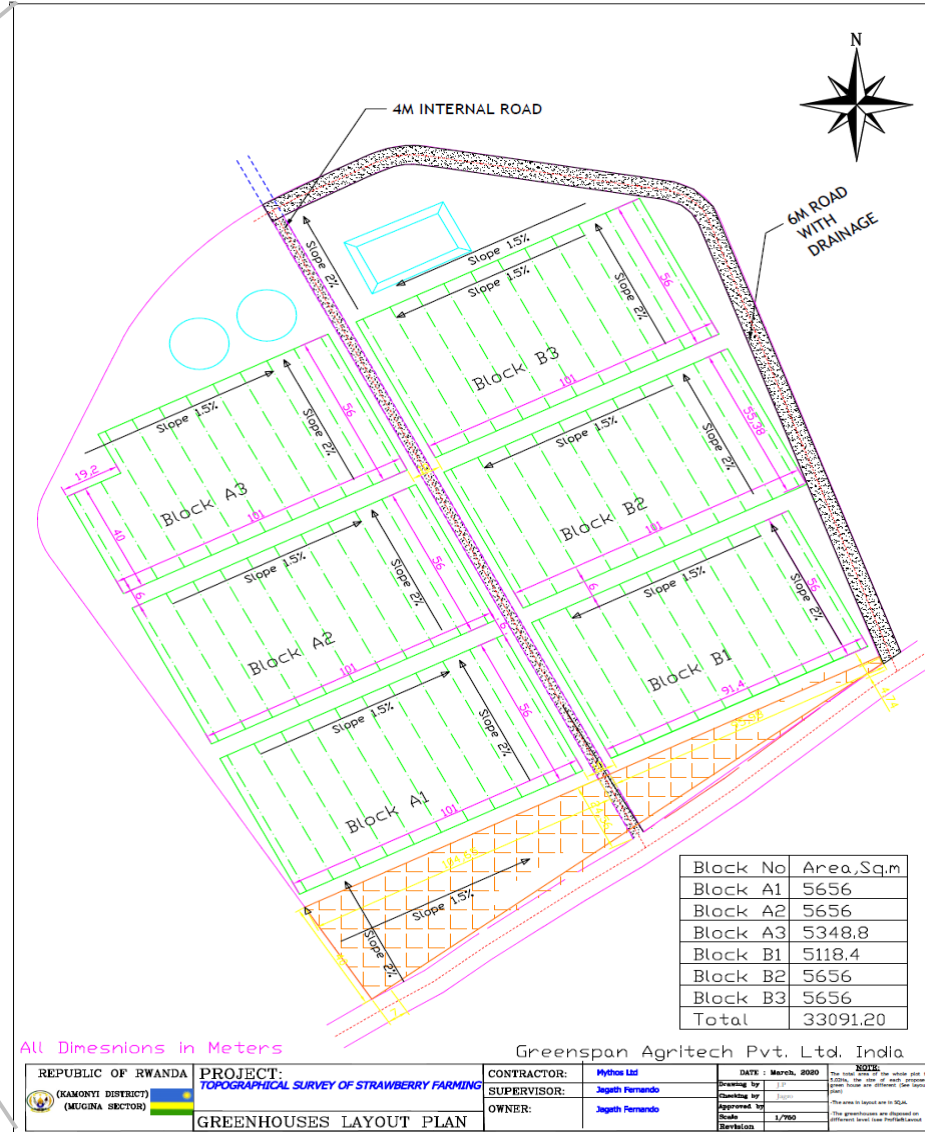
# After the TA, and Model Farm,



## JAGRO Investment



3.3ha Hydroponic System  
In Rwanda, AFRICA



# From public collaboration to B2B partnership,



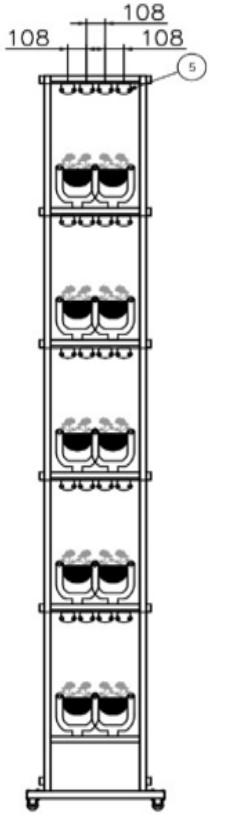
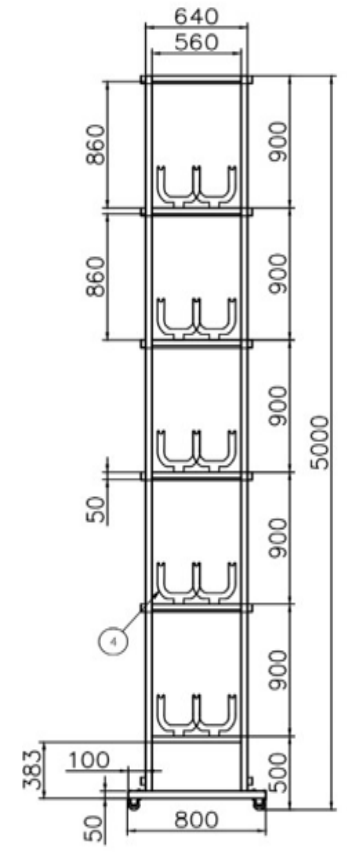
# Vertical Farming in Sri Lanka



Conventional Way



Applying Vertical Farm : Testing



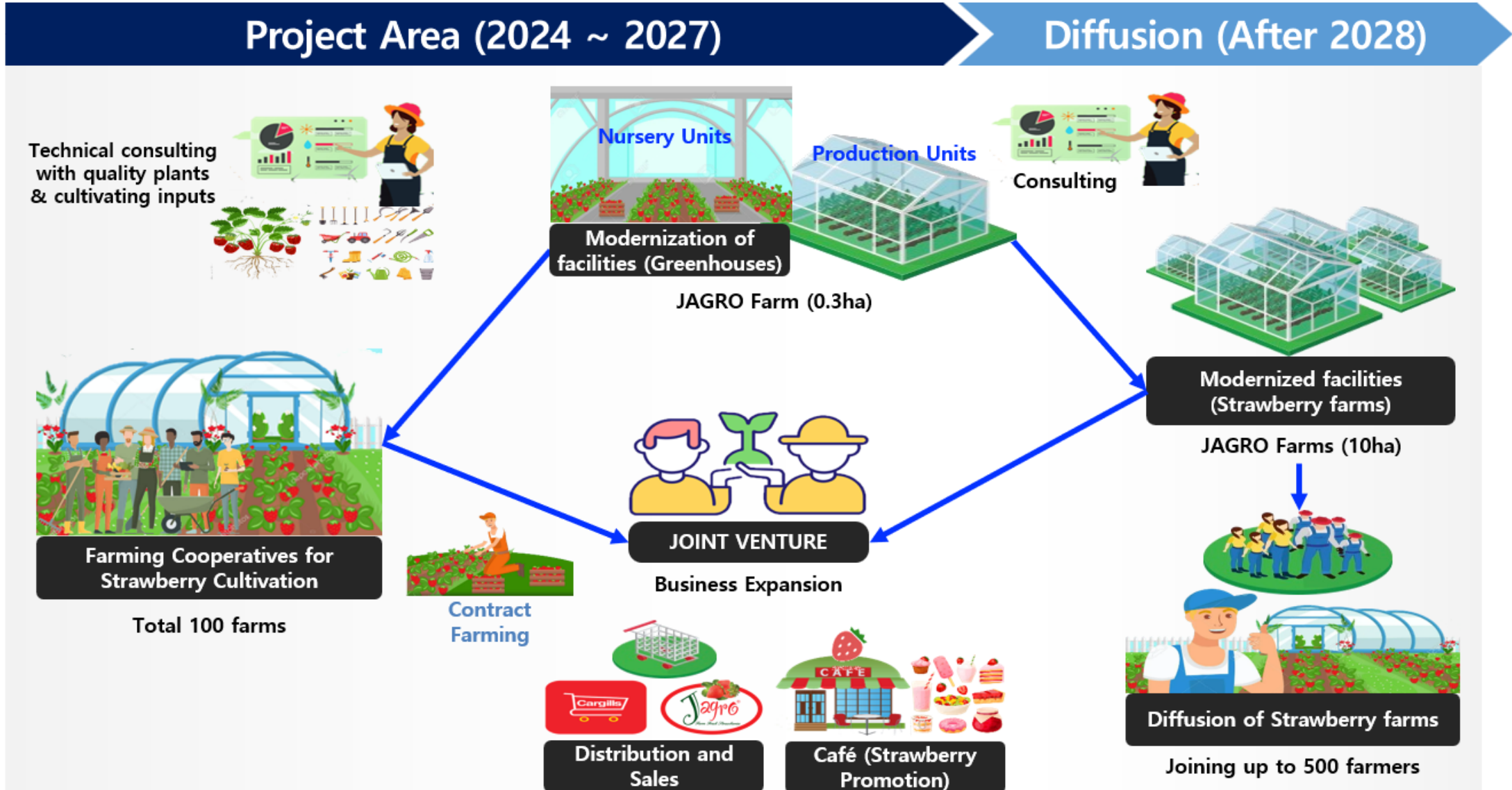
# Vertical Farming in Sri Lanka



Building vertical grow racks at the selected JAGRO farms in Nuwara Eliya, Sri Lanka

Source : NIA, ASK

# Vertical Farming in Sri Lanka



Proposed ODA project for inclusive development, and technology diffusion in Sri Lanka

Source : NIA, ASK

# Further Cooperation



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**பிரதம அமைச்சரின் அலுவலகம்**  
**PRIME MINISTER'S OFFICE**

56, ශ්‍රීමත් අර්ජුන් ජයවර්ධන මාවත, කොළඹ 07.  
 56, श्रीमंत अर्जुन जयवर्धन, කොළඹ 07.  
 56, Sir Ernest de Silva Mawatha, Colombo 07.

මාගේ සටහන  
 My Ref. PMO/SEC/01/01/01

ඔබේ සටහන  
 Your Ref.

දිනය  
 Date 31.07.2024

Dr. Jaeho LEE  
 Vice President / General Manager  
 Department of Global ICT Cooperation  
 National Information Society Agency (NIA)  
 Republic of Korea.

Dear Dr. Jaeho,

On behalf of the Government and the People of the Democratic Socialist Republic of Sri Lanka, and personally, I wish to extend sincere appreciation for the warm friendship and NIA's willingness toward promoting joint collaboration on Smart Farming under the ongoing Agriculture Modernization Strategy of Sri Lanka, during our fruitful meeting held on the 30<sup>th</sup> July 2024, during your short official visit to Colombo, Sri Lanka

I found our bilateral discussions to be highly constructive in further fortifying the friendly ties and fostering cooperation between Republic of Korea and Sri Lanka.

I eagerly anticipate our continued close cooperation, which I am confident will contribute building better, safer, and more prosperous socio economic opportunities for our rural farming communities through application of appropriate information communication technologies.

Please accept the assurance of my highest consideration.

Sincerely,

**Anura Dissanayake**  
 Secretary to the Prime Minister of Sri Lanka

☎ අංක: 2575317 / 2575318  
 ☎ අංක: 2575317 / 2575318

📠 ලිපි: 2574143 / 2579404  
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**ශ්‍රී ලංකා මහවැලි අධිකාරිය**  
 අංක: 500, ඊ.බී. ජයා මාවත, කොළඹ 10.  
**இலங்கை மகாவலி அதிகாரகரமை**  
 இல: 500, ஏ.பி. ஜயா மாவத்தை, கொழும்பு 10.  
**Mahaweli Authority of Sri Lanka**  
 No : 500, T.B. Jayah Mawatha, Colombo 10, Sri Lanka.

☎ අංක: 011-2683381  
 ☎ අංක: 011-2683381

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✉ විද්‍යුත් තැපෑල: info@mahaweli.gov.lk

My Ref: MASL/D/RDSP/03/V  
 Date: 2024.08.14

Mr. Jaeho Lee,  
 Vice President,  
 Department of Global ICT Cooperation,  
 National Information Society Agency (NIA),  
 Republic of Korea.

**Submission of the Project Concept Paper Establishment of a Climate Resilient Smart Argo Exports Demonstration Farm for Promotion of Vegetable Value - Chain in the Dry Zone under the new Agriculture Modernization Policy of Sri Lanka**

First of all, on behalf of the Mahaweli Authority of Sri Lanka, Ministry of Irrigation, I would like to convey my sincere gratitude for your kind cooperation by visiting our organization as well as other stakeholder organizations with the representatives of National Information Society Agency (NIA), Republic of Korea regarding the initiation of above Project Concept and for your continuous support and great contributions in the field of agriculture and rural development of Sri Lanka

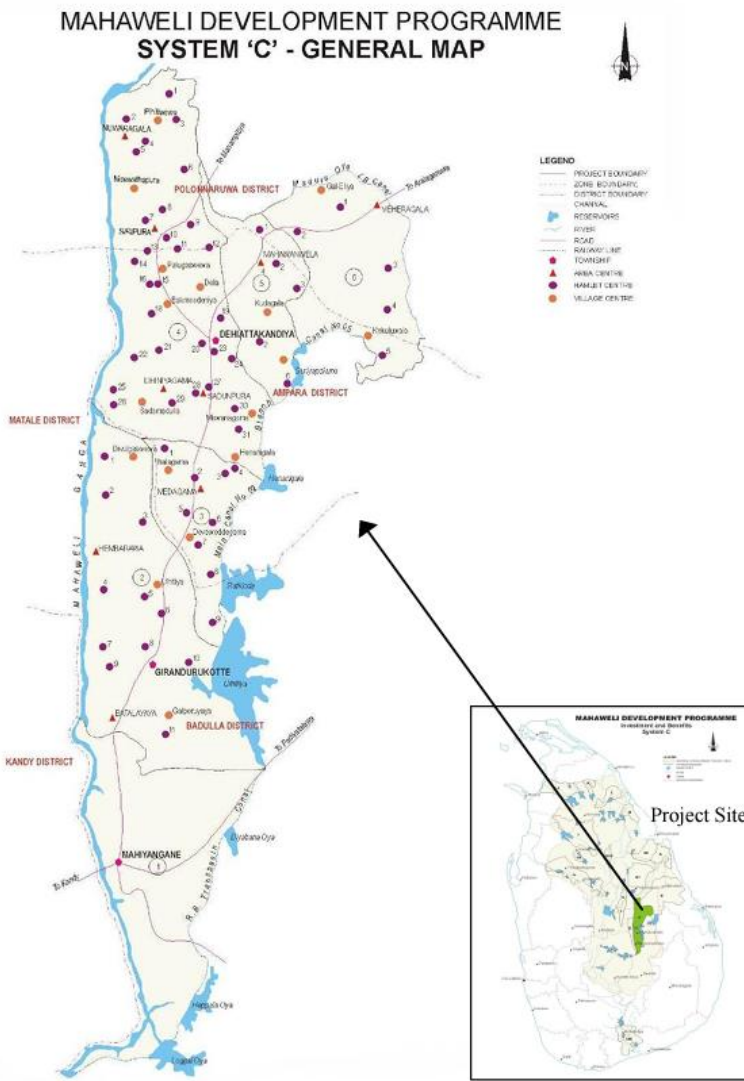
As the outcome of the discussions and the instructions given by the Secretary to the Prime Minister of Sri Lanka, the Mahaweli Authority of Sri Lanka is in a position of formulating a National Scale Project which targets the adoption of Modern Agriculture for responding to climate change with improved value-chain in line with the National Agriculture Modernization Strategy of Sri Lanka.

In line with that, Mahaweli Authority of Sri Lanka has prepared a Project Concept Paper (PCP), namely "Establishment of a Climate Resilient Smart Argo Exports Demonstration Farm for Promotion of Vegetable Value - Chain in the Dry Zone under the new Agriculture Modernization Policy of Sri Lanka" and please find the attached document.

Therefore, we are expecting the assistance from your esteemed organization for this proposed Project, for the successful implementation in Sri Lanka.

Your early attention in this regard is highly appreciated.

**M.L.D.C.M. Abeywardana**  
 Director General



**Request from the GoSL (PMO, MASL) this year:**  
 Continued collaboration for **expanded Smart Farm Application,**  
 and data-driven agriculture at the **'System C' of MASL**

Source : NIA, PMO & MASL of GoSL



# Further Cooperation



**Water Management Technologies**

**Induction of High Yielding Varieties**

**Pest and Disease Controlling Technologies**

**Protected Agriculture**

**Knowledge and Information (HR Development through training)**

**Mechanization  
(Particular to Paddy Cultivation)**

**Transplanting**

**Harvesting**

**Processing**

**Introducing Precision Agriculture Technologies**

**Drones & Remote Sensing**

**GS & GIS**

**Sensor Based Technologies**

**Digital Agriculture**

**Agri Management Databases & Software**

**Agricultural Market Places**

**Post-harvest Managements & Value Additions**

Potential linkage to the national 'Agriculture Modernization Program'

Source : Agriculture Modernization TF, Government of Sri Lanka

# Wrapping up,

## **‘Success Factors’, so far,**

- Strong will of the GoSL : Presidential TF, PMO, MASL...
- Secured funding stream from donors, including the WB
- Continued conversation among partners
- And, in our case, phased approach with active engagement of both public and private sectors
- Lastly, focusing on ‘capacity’ for growing commodities

## **Further discussion would be needed for,**

- Maximizing impact of the bi-/multi-lateral cooperation
- Increasing private sector participation, and investment
- Bringing more smallholder farmers into CSA practices





**Thank you.**

**감사합니다.**