



# SEAWEED INDIA 2022



## Technical Session 3 Regulatory Framework

### Farming & Import of Seed & Planning Material



**Department of Fisheries & Fishermen Welfare  
Government of Tamil Nadu**

# Introduction

- The main bottle neck faced by seaweed growers are difficulty in obtaining required quantum of quality seaweed seed materials.

- Continuous culture of single source parent seaweed and utilization of it as a source for seed material has resulted stunted growth and poor production.

- To meet out the requirement of the seaweed industry, seaweed seed to be imported from countries like Philippines, Indonesia etc.,

- The new strain of seaweed will also boost the aquaculture in India in general and attract more foreign investment for processing of valued added products.

- For production of 1.5MT seaweed we may required 9000MT of seaweed seeds.

## Present status of seaweed sector in Tamil Nadu

Department Fisheries, GoTN has been promoting seaweed farming as viable supplementary or alternative Livelihood activity for fisherfolk.

Department had distributed 15360 seaweed rafts and monolines to 1956 fisherwomen for seaweed farming.

The present average annual seaweed production in Tamil Nadu is 15,000 tonnes/Annum (Wet weight).

Installed seaweed processing capacity is 1.15 lakhs MT. Only 13% is being used.

The seaweed requirement for industry is 1,15,150 MT.

## Government support to the seaweed sector

Name of the scheme	No. of Beneficiaries	No. of rafts/ Monoline	Subsidy (in lakh)
TN FIMSUL	450	3000	32.27
NFDB	75	3000	54.00
GRRRP	120	1200	14.90
PMMSY	1311	8160	142.47
<b>Total</b>	<b>1956</b>	<b>15360</b>	<b>243.64</b>



## Seaweed Industry installed capacity

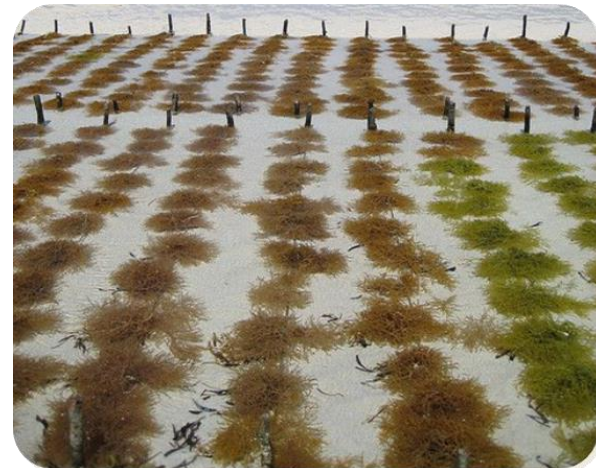
- Installed processing capacity in Tamil Nadu (Wet wt):1,15,150 MT/annum.
- Current Processing (capacity utilization) (wet wt) : 23,240 MT/annum (≈ 20.3%)
- Current import of seaweed from outside States (wet wt) : 8,550 MT/annum.
- Current procurement locally from Tamil Nadu (wet wt) : 11,700 MT/annum.



# Seaweed Park-HUB I

## Hub I- Seaweed seed Production Park

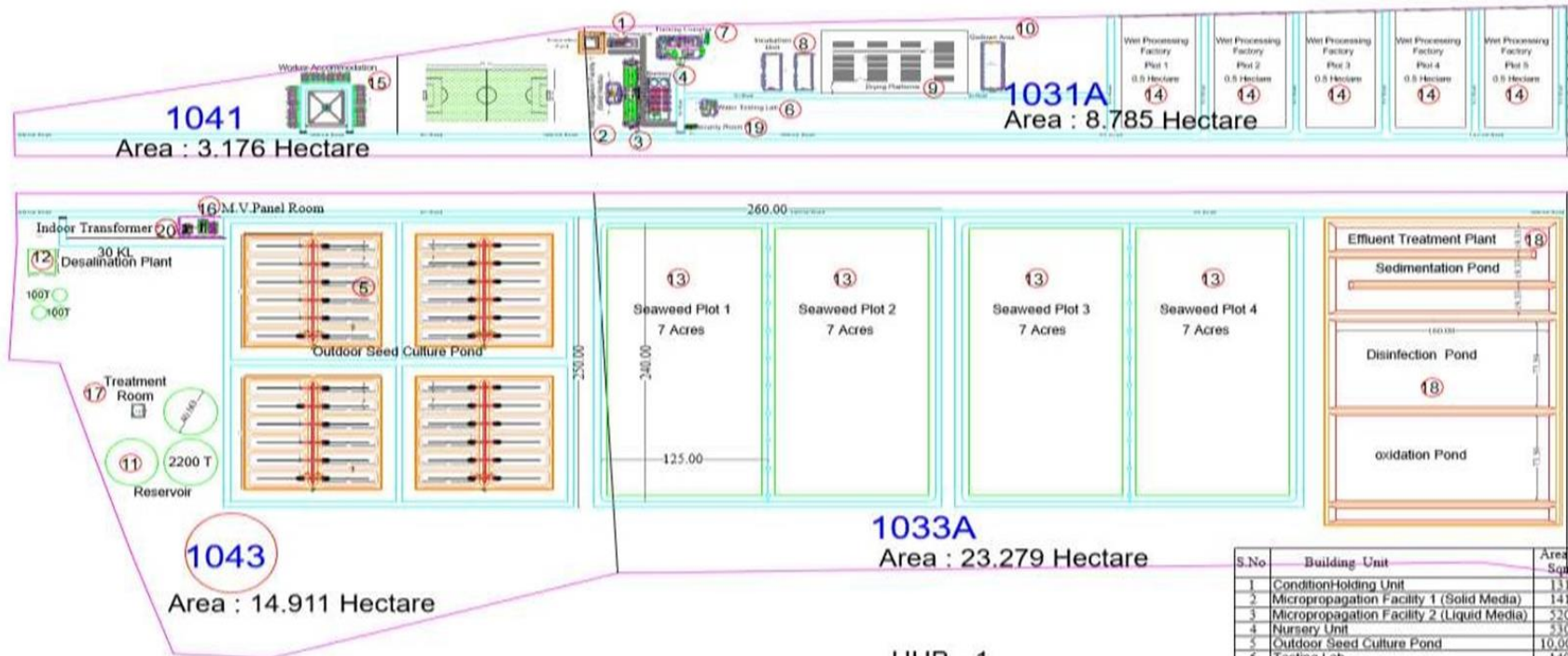
- ❖ Hub-I will be located at a location which is near to shore.
- ❖ Primary function will be production and multiplication of quality seed material through
  - 1) Micropropagation facilities
  - 2) Indoor plantlet culture unit
  - 3) Outdoor seed culture ponds



## **HUB I facility in seaweed Park**

- ✓ Tissue Culture Lab
- ✓ Indoor Plantlet Culture unit
- ✓ Outdoor Seed Cultivation Pond
- ✓ Training complex with halls, canteen, Trainees Rooms.
- ✓ Water Testing Labs
- ✓ Plots for allotment to processors for pond-based cultivation of seaweed.
- ✓ Water Intake System and Reservoirs.
- ✓ Effluent Treatment Plant
- ✓ Desalination Plant
- ✓ Road System, Power Supply and Backup Generator

# Hub 1- Master Layout



**HUB - 1**

S.No	Building Unit	Area in Sqm	Nos	Total Area in Sqm
1	Condition/Holding Unit	131	1	131
2	Micropropagation Facility 1 (Solid Media)	141	1	141
3	Micropropagation Facility 2 (Liquid Media)	520	1	520
4	Nursery Unit	530	1	530
5	Outdoor Seed Culture Pond	10,000	2	20,000
6	Testing Lab	140	1	140
7	Training Complex	496	1	496
8	Incubation Units	377	3	1131
9	Drying Platform	5940	1	5940
10	Godown Area	600	1	600
11	Water Intake System & Reservoir	1,250	3	3,750
12	Desalination Plant	400	1	400
13	Seaweed Plot	30,000	4	1,20,000
14	Wet Processing Factory Plot	5000	5	25,000
15	Worker Accommodation	110	6	660
16	M.V. Panel Room	512	1	512
17	Treatment Room	80	1	80
18	Earthen ETP	47,348	1	47,348
19	Security	23.00	1	23.00
20	Indoor Transformer	40.00	1	40.00
Total Area in Sqm				2,27,442.00



# O& M Model Recommendation –HUB I

SL. No	Component	O& M Model	Potential Revenue streams	Recommendations
1	Hub 1 level: ❖ Micropropagation facility (Solid media) ❖ Micropropagation facility (liquid media) ❖ Indoor Plantlet Culture unit ❖ Outdoor Seed Cultivation Pond	<ul style="list-style-type: none"> <li>❖ <b>Public – Private Partnership (PPP) model</b></li> <li>❖ Private stakeholder ready to invest and operate the seaweed seed development.</li> <li>❖ <b>Responsibility:</b> To meet the production target of the Seaweed seedling production from micropropagation facility.</li> <li>❖ Seaweed seedling distribution to and buy back from seed Farmers.</li> <li>❖ Buy back promise of seedlings will be provided by Fisheries department to the private investor.</li> <li>❖ Fisheries department will nominate the members from research university in governing bodies.</li> </ul>	Seaweed seed material sale	<ul style="list-style-type: none"> <li>❖ Private players can invest and involve in day-to-day operations.</li> <li>❖ Members from Technical Research Institute can be nominated by Fisheries department in the governing committee</li> </ul>

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SL. No	Component	O & M Model	Potential Revenue streams	Recommendations
2	Training complex with halls, canteen, Trainees Rooms	<b>Govt Led:</b> Fisheries Department & Technical Research Institute (CMSCRI/CMFRI).	User fee paid by different agencies conducting training programs.	NFDB provides assistance for training and Demonstration for seaweed cultivation.
3	Drying Platforms Storage Godowns	<b>Leasing out:</b> Private Player interested in leasing out.	Lease of the drying platforms and storage godowns for processors.	
4	Water Testing lab	<b>Govt Led:</b> Fisheries Department & Technical Research Institute (CMSCRI/CMFRI).	Usage of water testing facility.	Seaweed FPOs can be engaged on regular basis to send water testing samples for ensuring water quality of the cultivation sites.

## Targets Envisaged

Particulars	Current	Year 1	Year 2	Year 3
Seaweed Production (MT, wet)	14,779	19,700	30,600	49,000
Seaweed Farmers (nos)	650	625	969	1,552
Seed Production Volumes (MT) - 50% seed replacement	<b>462</b>	<b>778</b>	<b>1,153</b>	<b>1,539</b>
Seed Farmers to be established (nos)		73	104	137



## Seaweed seedlings import plan for achieving 50% seed replacement

Particulars	Unit	Year 1	Year 2	Year 3	Total
Production estimate per annum	Tons	19,700	30,600	49,000	
Current seed requirement (50% seed replacement)	Tons	778	1153	1539	
<b>Volume of seedlings to be imported</b>					
Tissue culture seedlings for field propagation	Kg	21	21	21	63
Field seedlings for field propagation	Kg	800	1200	1600	3600
Field seedlings for micropropagation	Kg	70	70	140	280
Total volume of seedlings to be imported	<b>Kg</b>	<b>891</b>	<b>1291</b>	<b>1761</b>	<b>3943</b>
Volume of seedlings to be imported	Kg	891	1291	1761	3943
No of import consignments	Nos	4	5	7	16
Total volume of seedlings to be produced	<b>Kg</b>	<b>777510</b>	<b>1152510</b>	<b>1539270</b>	<b>3469290</b>

# **Inter Departmental coordination in seaweed seed Import**

- ❖ Department of Agriculture, cooperation and farmer welfare.
- ❖ Directorate of Plant Protection Quarantine and Storage (DPPQ & S).
- ❖ National Bureau of Plant Genetic Resources (NBPGR)
- ❖ Indian Institute of Horticultural Research.
- ❖ Tamil Nadu Agriculture University.



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<b>Sl. No</b>	<b>Ministry/Department/ Organization</b>	<b>Role &amp; Responsibilities</b>
1	Joint Secretary, Department of Agriculture, cooperation and farmer welfare	<ul style="list-style-type: none"><li>• Authority to issue permit for import of plant materials.</li></ul>
2	Plant Protection Adviser, Directorate of Plant Protection Quarantine and Storage (DPPQ & S)	<ul style="list-style-type: none"><li>• Approval of Post entry quarantine facilities jointly with concerned inspection authority.</li></ul>
3	Deputy Director , Regional Plant Quarantine Station, Chennai	<ul style="list-style-type: none"><li>• Issue of permit for consignment at the point of entry.</li><li>• Approval of Post entry quarantine facility and inspection of samples.</li></ul>

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<b>Sl. No</b>	<b>Ministry/Department/ Organization</b>	<b>Role &amp; Responsibilities</b>
4	National Plant Protection Organization of export country	<ul style="list-style-type: none"><li>• Issue of Phytosanitary certificate</li></ul>
5	Director, National Bureau of Plant Genetic Resources (NBPGR)	<ul style="list-style-type: none"><li>• Authorized to issue permits for import of germ plasm/Genetically modified plants.</li></ul>
6	Head - Indian Institute of Horticultural Research	<ul style="list-style-type: none"><li>• Inspection authority for tissue culture raised plant</li></ul>
7	Head -Division of plant pathology, Tamil Nadu Agriculture University	<ul style="list-style-type: none"><li>• For certification of post entry quarantine facilities and inspection of growing plants</li></ul>

## Seaweed Seed Import Requirements

Sl. No	Particulars	Forms and Documents required
A	<p><b>Identification of exporting country- Identification of exporter</b></p> <ul style="list-style-type: none"> <li>➤ Country of Preference – Indonesia/Philippines</li> <li>➤ Selection of Company/Organisation for import</li> </ul>	<ul style="list-style-type: none"> <li>➤ PQ Form 24 -Technical Details of the plant to be given by National Plant Protection Organization</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Phytosanitary certificate issued by the country of origin</li> </ul>	<ul style="list-style-type: none"> <li>➤ PQ Form 21 - Biological details of the plant to be given by National Plant Protection Organization</li> </ul>



Sl. No	Particulars	Forms and Documents required
<b>B</b>	<b>Import permit for Kappaphycus</b>	
	➤ Request for including seaweed in the permitted list of items to be imported	<ul style="list-style-type: none"> <li>➤ PQ Form no 23 (Application for PRA)</li> <li>➤ PQ Form no 24 Technical information requirement for PRA</li> </ul>
	➤ Plant Protection Adviser, DPPQS, Faridabad(Hariyana) or JS (PP)DAC &FW, Krishi Bhavan, New Delhi	
	➤ Pest Risk Analysis - PRA along with import Permit has to be send to the exporter for including the details in the phytosanitary certificate	➤ PQ Form no 23 (Application for PRA) & PQ Form no 24 Technical information requirement for PRA

<b>Sl. No</b>	<b>Particulars</b>	<b>Forms and Documents required</b>
C	<ul style="list-style-type: none"><li>➤ Post entry quarantine division (Purpose- to get certificate of approval for post entry quarantine facility)</li></ul>	<ul style="list-style-type: none"><li>➤ PQ form no 18 &amp; 19 -Application for certificate of approval of post entry quarantine facility.</li><li>➤ PQ form no 20- Undertaking for the post entry quarantine facility.</li></ul>
D	<ul style="list-style-type: none"><li>➤ Point of entry of imported plant material</li></ul>	<ul style="list-style-type: none"><li>➤ All consignment of plants for propagation shall only be imported to India through regional plant quarantine station.</li><li>➤ On arrival of first point of entry - consignment shall be inspected by the plant protection adviser or designated officer - samples shall be drawn for testing (PQ-16/17).</li><li>➤ PQ-15-request for quarantine inspection of imported feed.</li></ul>

<b>Sl. No</b>	<b>Particulars</b>	<b>Forms and Documents required</b>
	<ul style="list-style-type: none"><li>➤ Germ Plasm- Commercial purpose/ Research.</li><li>➤ For research purpose the approval issued by the Director, NBPGR, New Delhi.</li></ul>	<ul style="list-style-type: none"><li>➤ PQ form no 08-application to be submitted.</li><li>➤ PQ form no 09 and 10 - permit shall be issued</li></ul>

## Conclusion

The new strain of seaweed will also boost the aquaculture in India in general and attract more foreign investment for processing of valued added products.

The new strain of seaweed *Kappaphycus* / *Eucheuma* with vigorous growth and disease resistant variety will attract more fishermen and create huge livelihood opportunities to coastal community of all maritime states of India.

The annual carrageenan consumption in India is about 1500MT and at present it is fully met through import, therefore encouraging the industries to manufacture such high value product will generate import substitution and country will become self-reliant in carrageenan and other seaweed based organic agricultural inputs.

**Thank You**