

GOVERNMENT OF TAMIL NADU

Department of
Fisheries and Fishermen Welfare

Establishment of a Multipurpose Seaweed Park in Tamil Nadu



Coastal Villages in Palk Bay and Gulf of Mannar

District	No. of fishing villages	Coastal Length (Km)
Palk Bay region		
Nagapattinam	05	63.0
Thanjavur	27	45.1
Tiruvarur	13	47.2
Pudukkottai	32	42.8
Ramanathapuram	83	95.8
Sub-total	160	293.9
Gulf of Mannar region		
Ramanathapuram	94	141
Thoothukudi	21	163.5
Tirunelveli	07	48.9
Kanyakumari	08	11.5
Sub-total	130	364.9
Total	290	658.8

Seaweed Farming in Palk Bay and Gulf of Mannar

Coastal Villages identified for Seaweed

Potential Districts	No. of suitable coastal villages	
	Seed Bank	Seaweed Farming
Ramanathapuram	16	85
Thoothukudi	0	07
Pudukkottai	08	20
Nagapattinam	0	08
Thanjavur	08	15
Thiruvarur	0	01
Total	32	136

Potential Districts selected for promotion of Seaweed farming in Tamil Nadu

Mayiladuthurai

Nagapattinam

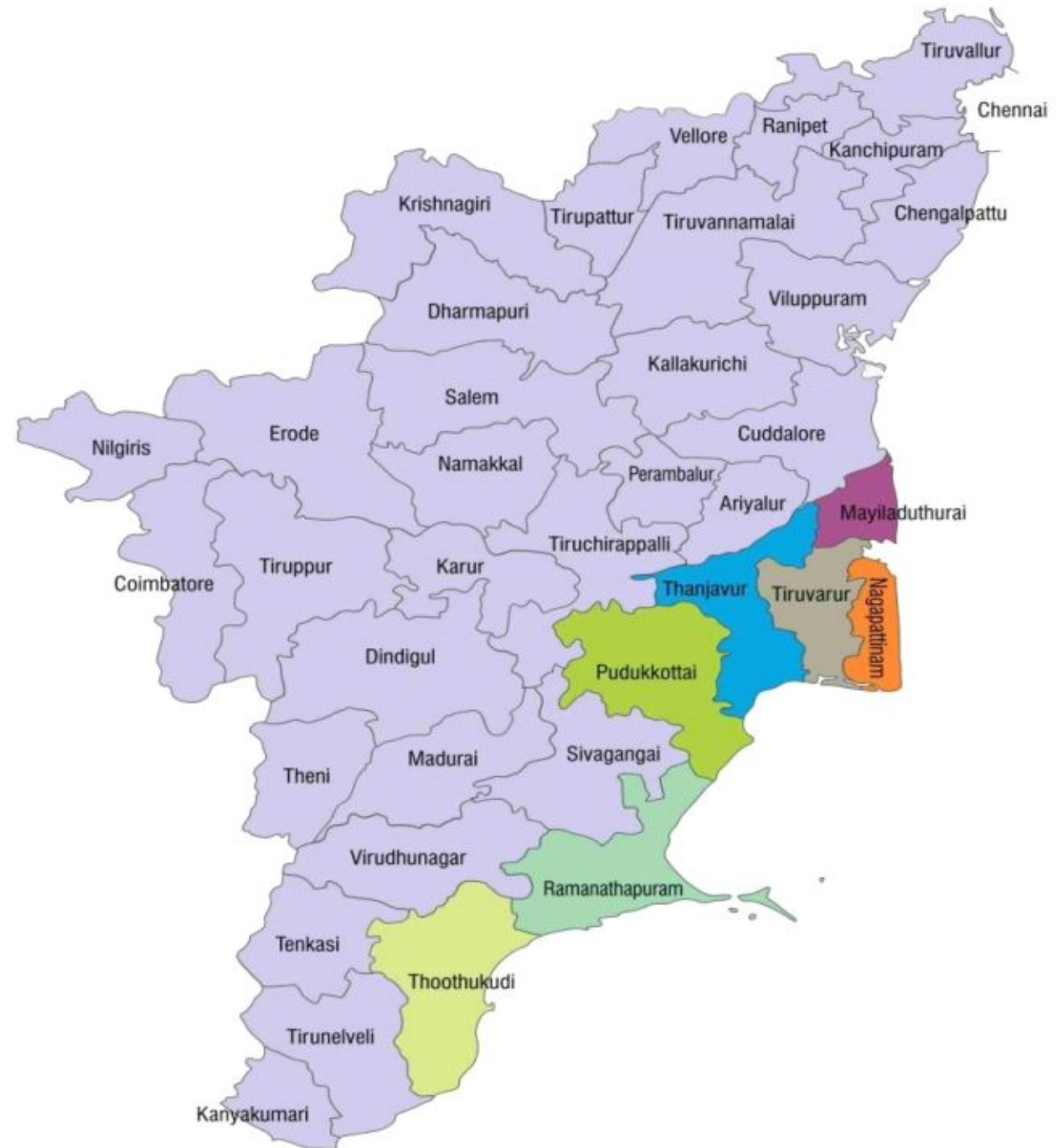
Thajavur

Tiruvarur

Pudukkottai

Ramanathapuram

Thoothukudi



Major issues

Farmers

Lack of alternate seaweed species for commercial cultivations

Lack of seaweed seed banks

Financial constraints

Industries

Lack of R&D support

Scarcity of raw material

Lack of exposure to Export market

Ongoing measures of the Government of Tamil Nadu

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

Department as distributed 15,360 seaweed rafts and monolines to 1956 fisherwomen for seaweed farming.

The present average annual seaweed production in Tamil Nadu is 10,000 tonnes/Annum (Wet weight).

The seaweed requirement for industry is 1,15,000 MT.

Installed seaweed processing capacity is 1.15 lakhs MT. Only 12% is being used.

Need for the Integrated New Seaweed Project

Seaweed sector

The Govt. of Tamil Nadu Proposes a holistic development of seaweed sector in the state with integrated approach.

Catering to industries entrepreneurs of the seaweed industry in order to take this sector into the next higher level in the state and country.

With the present thrust for expansion of seaweed sector provided by the state and Govt. of India, the State of Tamil Nadu is poised for the growth of a unique modern seaweed hub on par with international standards.

By attracting investors, producers, marketers and making Tamil Nadu as a one stop destination for seaweed sector.

Seaweed Hub

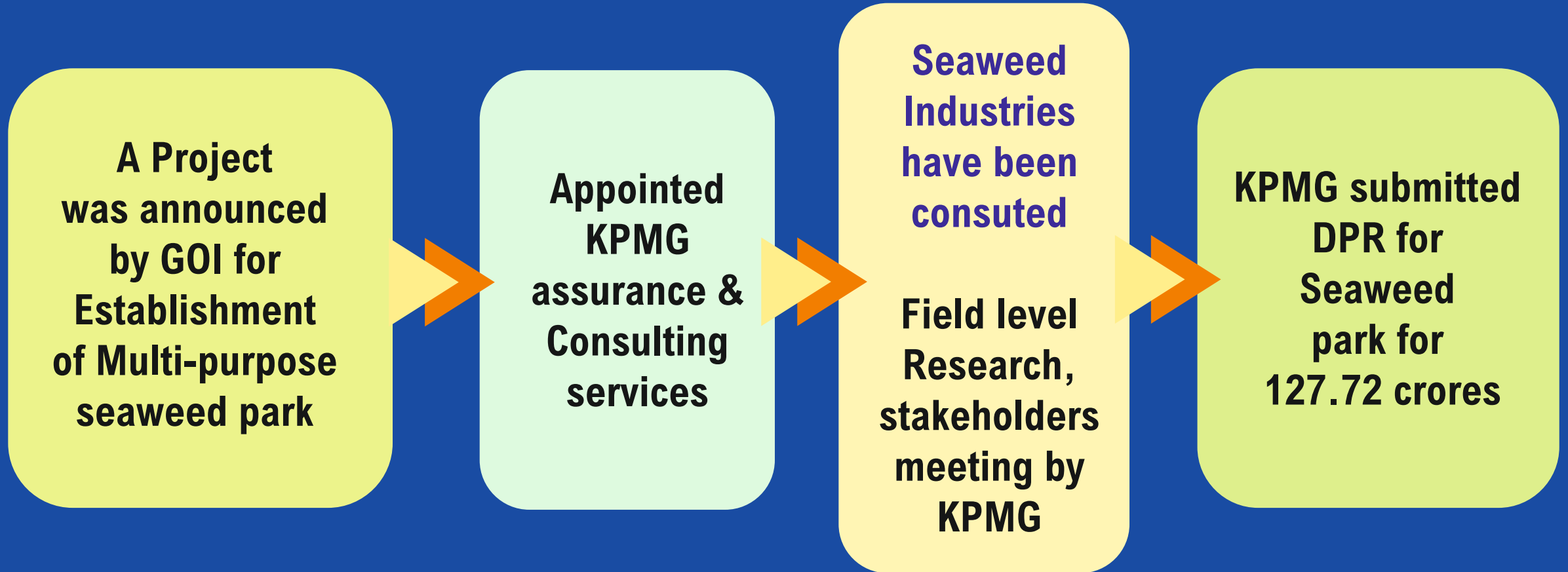
Announcement on Establishment of Multipurpose Seaweed Park

Problem

There is a huge gap between the Seaweed production and industry requirement.

In order to tap the seaweed potential of the State, during the budget session 2020-2021, Gol had announced the project on Establishment of Multipurpose Seaweed Park in Tamil Nadu.

Chronology of Project Development



Objectives

Creation of Employment opportunity to the coastal fisher youth and fisherwomen.

Development of value-added seaweed products by encouraging private sector/Entrepreneurs and supporting them to set up seaweed processing units in the proposed seaweed park.

Exploration of untapped seaweed Potential in the coastal districts of Tamil Nadu through scientific and traditional seaweed farming.

Development of R & D centres for production of quality seaweed.

Development of seaweed seed bank through Research Institutes, Universities, Private entrepreneurs and Fisheries Department.

Focus of the project

Immediate Focus

- Immediate focus is to increase the production level to match the processing demand in a phased manner:
 - **Increase yield by seed replacement**
 - **Increase production by increasing the number of farmers**
- Increase village level infrastructure for drying, storage and accessibility
- Establish a sustainable Seaweed seed production and supply system
- Creation of necessary Infrastructure:

Medium to Long-term Focus

- **Increase processing capacity in the subsequent phase through establishment of seaweed processing park**
- **Simultaneously work on increasing production to match increased processing capacity**
- **Creation of necessary Infrastructure:**

Strategy for Seaweed seed replacement in Tamil Nadu

Integrated model for multipurpose Seaweed Park

Establishment of integrated seaweed park in the State is envisaged to provide the necessary infrastructure to drive R&D initiatives for production of quality seed material, development of new product lines from seaweeds. The seaweed park will also provide single window support for the entrepreneurs, processors etc. to access information on schemes, licenses/approvals required, while also providing space to set up processing centres

Seed Production and multiplication

Seaweed Seed Production can be managed by engaging farmers from three districts –

Ramanathapuram (Palk Bay), Pudukottai District (Palk Bay) and Thoothukudi (Gulf of Mannar).

Focus will be on two key aspects, **germplasm improvement & rapid seed multiplication**

Development of Seed Development Agency for seed production and multiplication:

Rapid multiplication of seed material will be entrusted to the progressive farmers. **To streamline the process and manage the operations and activity of seed multiplication and distribution better**, a formal institutional mechanism will be established in form of Farmer Producer Organizations at District Level.



Multipurpose Seaweed Park

Commercialization techniques of alternative species for seaweed culture

Genetic improvement program for development of good quality seedlings

Development of various value added products from Seaweeds

Since, Seaweed park acts as a Hub, It is easy for the Institutions for transfer of technologies swiftly



**Role of Research
Institutions
in the Seaweed park**

Seaweed park – The Solution

For farmers

- Potential to transform the lives of coastal communities and will provide large employment and additional income.
- Great opportunity as an alternative livelihood option during off and ban season
- Empowerment of Fisherwomen
- Farmers can receive hands-on training on advanced and intensive cultivation methods
- Helps in regulation of procurement price by avoiding middle-men
- Easy availability of good quality seeds throughout the year for continuous culture





- Seaweed park will help in bringing more investments to the industry as in case of finfish and shrimp industries
- **Easy availability of raw materials**
- Encourages the industries to grow vertically (Produce – Process – Export)
- **State of the art infrastructure and technical expertise will help industries to implement and develop advanced and cost-effective technologies**
- Product diversification and Export of various value-added products from seaweed
- **Proper marketing model helps in easy value-chain process**
- Branding of Indian products in Export market

Targets Envisaged

Sl. No.	Particulars	Revised estimates- Quantity (MT/annum)	Share (%)
1	Current estimated production (fresh/wet)	13,300 to 16,300	9-11% of production potential
2	Estimated production potential (fresh/wet)	148,500 to 181,500	
3	Installed Capacity of Seaweed processing (fresh/wet)	115,150*	
4	Current capacity utilization of Seaweed Processing (fresh/wet)	24,265	~ 21.1% of installed capacity
5	Current import of raw material from outside States (fresh/wet)	8,550	~35% of current RM processed

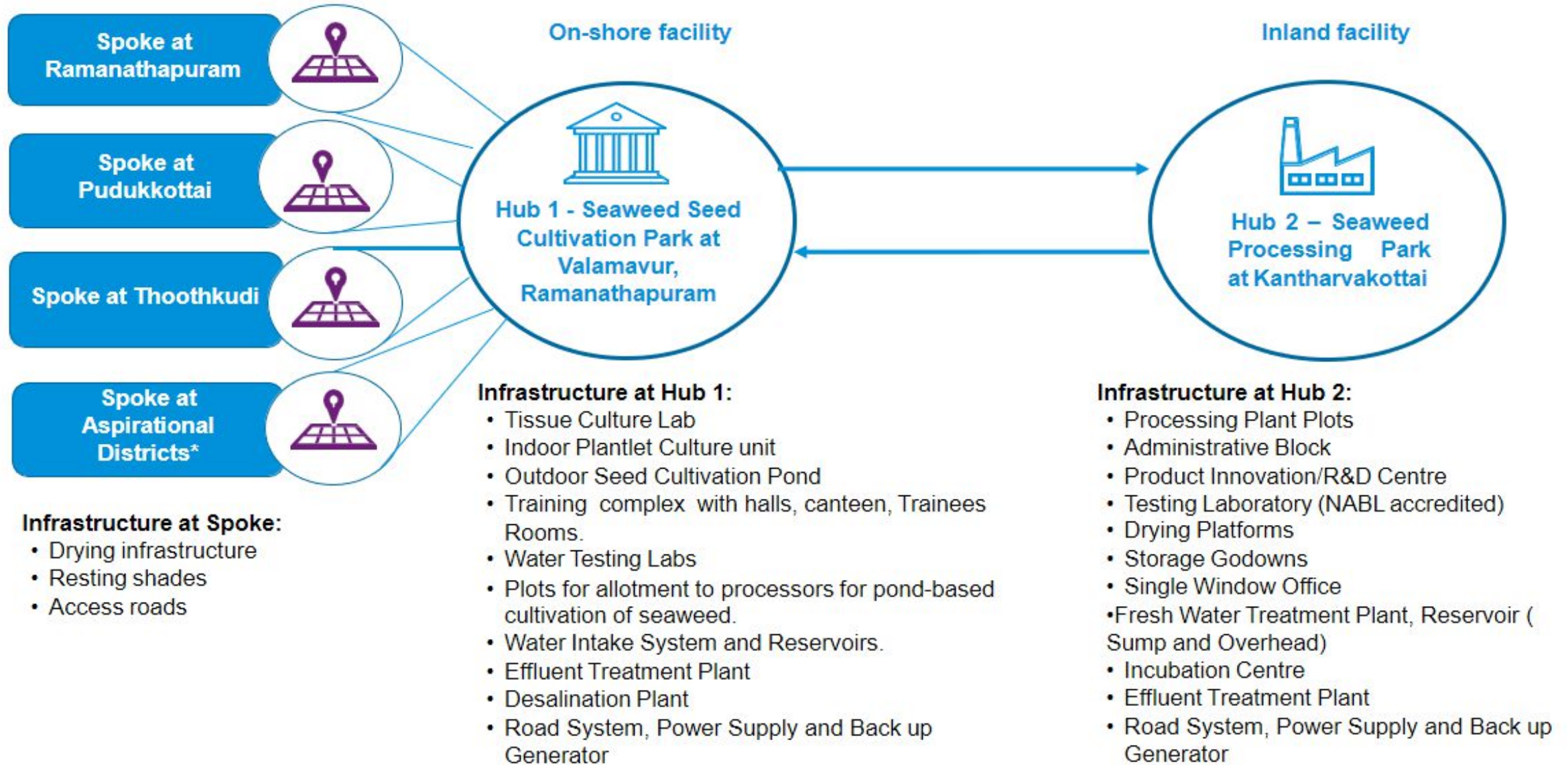
Particulars	Current	Year 1	Year 2	Year 3
Seaweed Production (MT, wet)	14,779	19,700	30,600	49,000
Seaweed Farmers (nos)	650	625	969	1,552
Seed Production Volumes (MT) - 50% seed replacement	462	778	1,153	1,539
Seed Farmers to be established (nos)		73	104	137

Estimated budget forestablishment of multi-purpose seaweed park

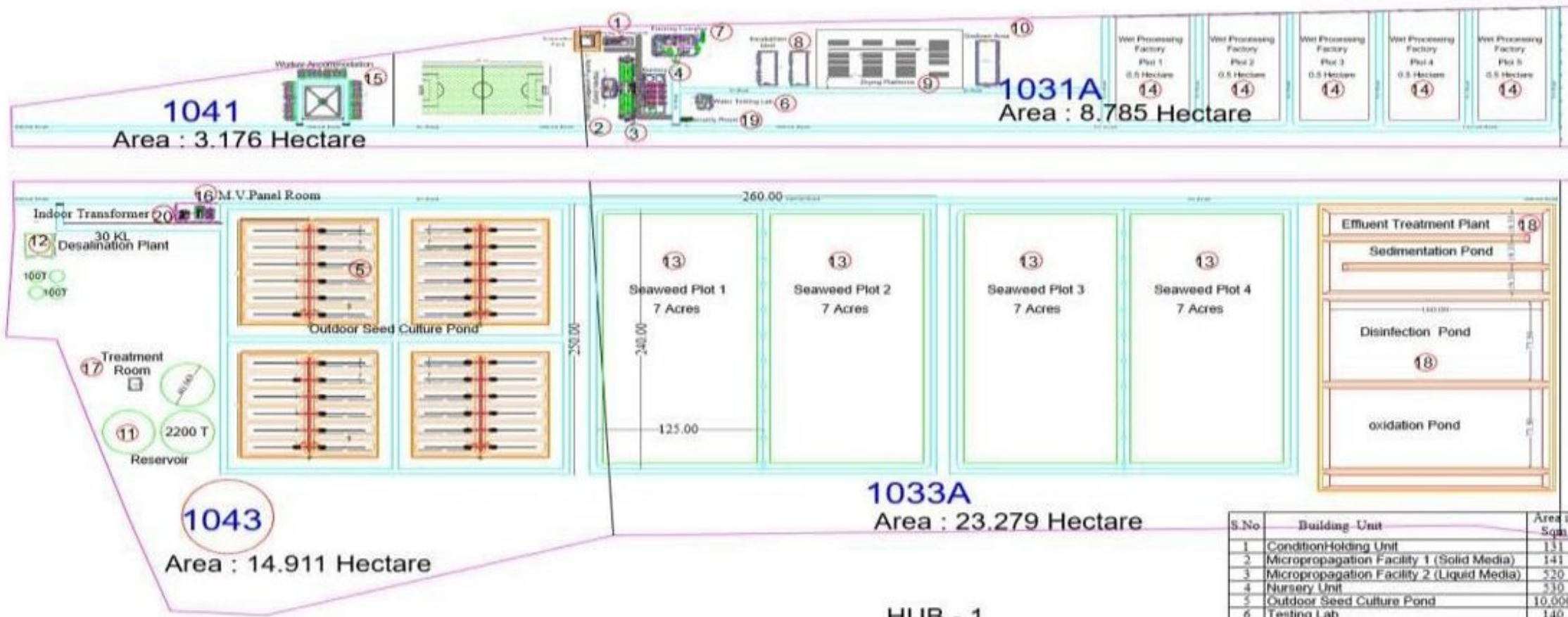
Particulars	Total Program Cost	Central Govt. Share	State Govt. Share	Beneficiary Share
Hub-1 (Seaweed Production Park)	127.71	75.15	48.94	3.60
Hub-2 (Seaweed Processing Park)				
Spoke level (Type 1)				
Spoke level (Type 2)				
Seed importation and probagation				
FPO formation & funding support				
Seaweed farmer support raft				
Seaweed farmer support monoline				
Total Cost (in Crores)	127.71	75.15	48.94	3.60

Multipurpose Seaweed Park – Hub & Spoke model

Conceptual Framework of Integrated Seaweed Park



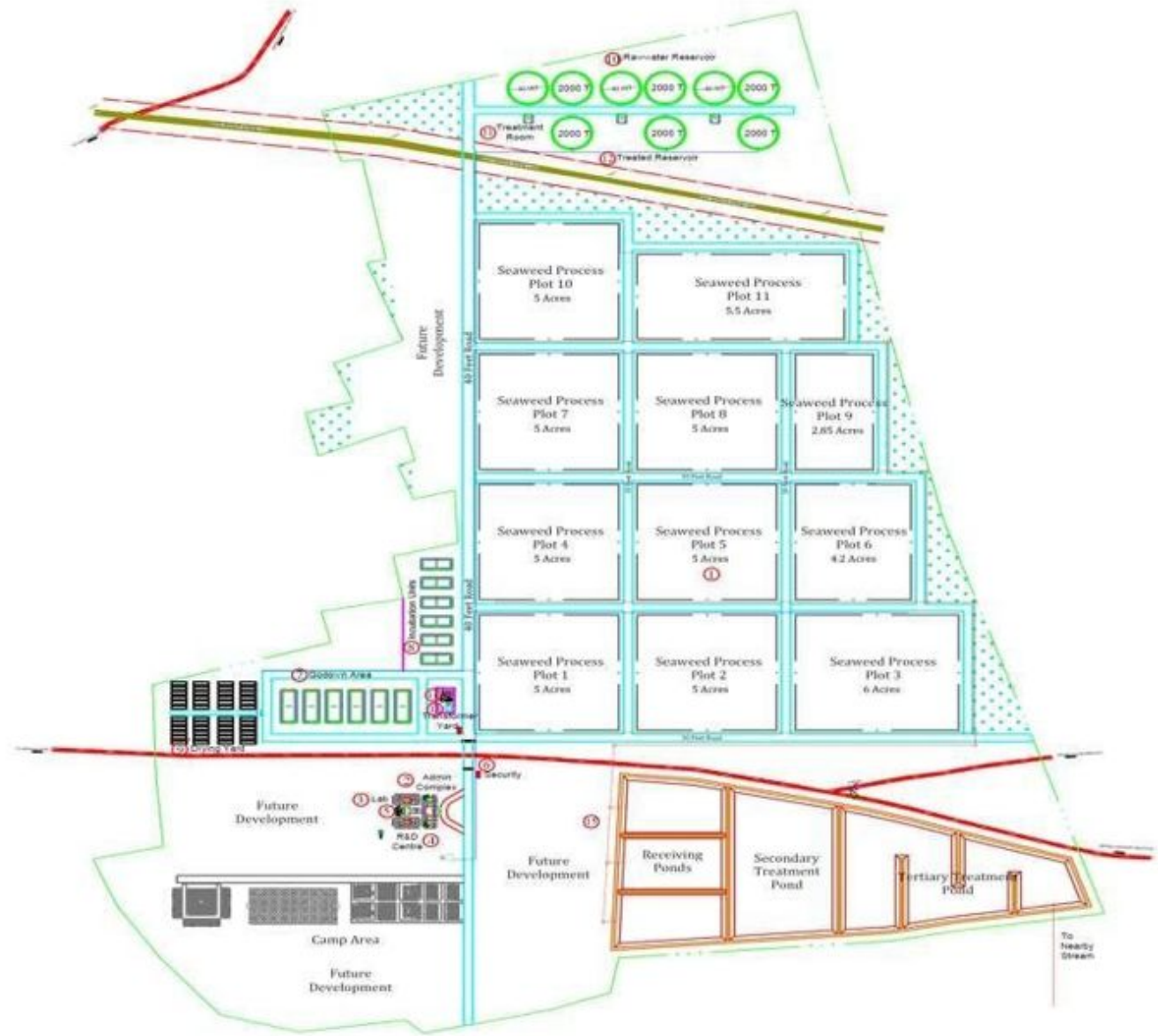
Hub 1- Master Layout



HUB - 1

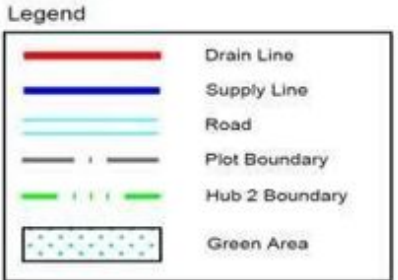
S.No	Building Unit	Area in Sqm	Nos	Total Area in Sqm
1	Condition Holding Unit	131	1	131
2	Micropropagation Facility 1 (Solid Media)	141	1	141
3	Micropropagation Facility 2 (Liquid Media)	520	1	520
4	Nursery Unit	530	1	530
5	Outdoor Seed Culture Pond	10,000	2	20,000
6	Testing Lab	140	1	140
7	Training 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

Hub-2 master layout



AREA STATEMENT OF THE BUILDING						
Building No	Building Name	No	Length (m)	Breadth (m)	Area (Sqft)	Area (Sqft)
1	Seaweed Process Plot	11	2,27,549.95	25,83,049.45	2,69,40,321.23	
2	Admin Building	1	39.60	12.00	463.20	4,985.42
3	Lab	1	25.20	10.80	272.16	2,929.26
4	R&D Centre	1	28.20	10.80	272.16	2,929.26
5	Ticket Block	1	10.83	6.50	70.40	757.66
6	Security Building	2	7.50	3.50	51.10	549.99
7	Cafeteria	8	40.00	15.00	4,800.00	51,662.40
8	Incubation Unit	6	30.40	12.40	2,261.76	24,343.32
9	Drying Yard Platform	48	15.00	4.00	2,880.00	30,907.44
10	Circular Rawwater Reservoir	6	1,280.00		7,680.00	82,659.84
11	Treatment Room	3	10.40	8.40	262.08	2,820.77
12	Circular Treatment Reservoir	3	1,280.00		3,840.00	41,529.92
13	Indoor Transformer Room	1	6.30	6.40	40.32	431.96
14	MV Panel Room	1	13.85	10.40	144.04	1,550.30
15	ETP	1	73,681.26		73,681.26	7,93,031.35
Total					96,718.47	10,40,988.90

Plot Details					
S. No.	Plot Number	Length (m)	Breadth (m)	Area (Sqft)	Area (Sqft)
1	Plot 1	142.00	145.00	20,590.00	2,21,610.17
2	Plot 2	142.00	145.00	20,590.00	2,21,610.17
3	Plot 3	166.65	145.00	24,164.25	2,60,079.82
4	Plot 4	142.00	145.00	20,590.00	2,21,610.17
5	Plot 5	142.00	145.00	20,590.00	2,21,610.17
6	Plot 6	118.03	145.00	17,114.35	1,84,201.75
7	Plot 7	142.00	145.00	20,590.00	2,21,610.17
8	Plot 8	142.00	145.00	20,590.00	2,21,610.17
9	Plot 9	79.55	145.00	11,534.75	1,24,148.51
10	Plot 10	142.00	145.00	20,590.00	2,21,610.17
11	Plot 11	211.08	145.00	30,606.60	3,29,418.84
Total				2,27,549.95	24,49,120.11



O&M Model- Recommendations – Hub 1 level

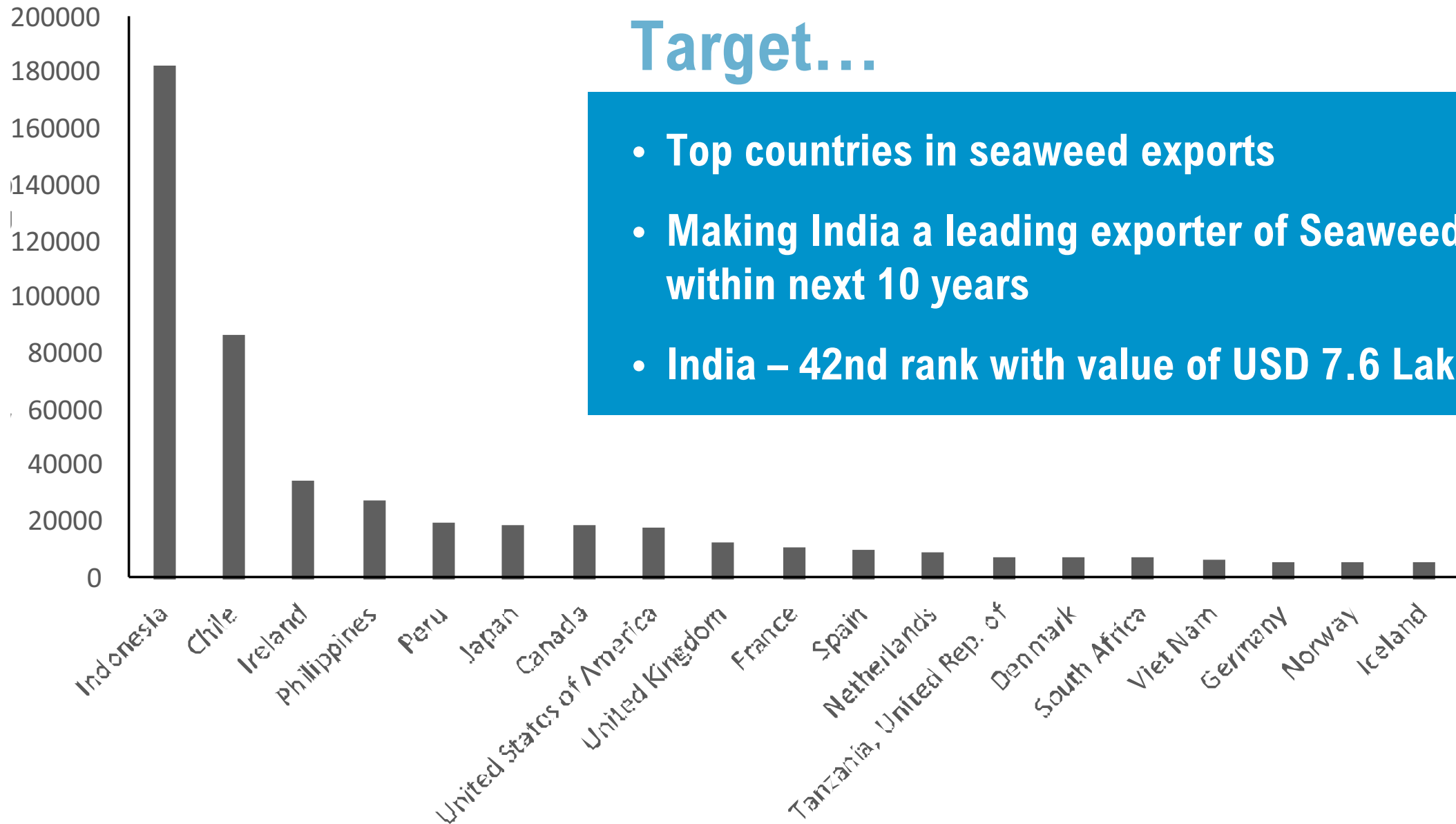
S.no	Component	O&M model	Potential Revenue streams	Recommendations
1	Hub 1 level: <ul style="list-style-type: none"> • Micropropagation facility (Solid & liquid media) • Indoor Plantlet Culture unit • Outdoor Seed Cultivation Pond 	<ul style="list-style-type: none"> • Public – Private Partnership (PPP) model • Responsibility: To meet the production target of the Seaweed seedling production from micropropagation facility • Seaweed seedling distribution to and buy back from seed farmers • Buy back promise of seedlings will be provided by Fisheries department to the private investor • Fisheries department will nominate the members from research university in governing bodies 	Seaweed seed material sale	<ul style="list-style-type: none"> • Private players can invest and involve in day-to-day operations. • Nominated of members by Fisheries department in the governing committee
2	Training complex	Govt Led: 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	Leasing out: Private Player interested in leasing out	Lease of the drying platforms and storage godowns for processors	
4	Water Testing lab	Govt Led: 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

O&M Model- Recommendations – Hub 2 level

S.no	Component	O&M model	Potential Revenue streams	Recommendations
5	Hub 2 level: <ul style="list-style-type: none"> • Plots for allotment to processors for pond-based cultivation of seaweed • Incubation centre for processing of wet seaweeds 	Lease out to interested private players	Lease of plots for inland seaweed cultivation and production	Lease out to interested private players
6	<ul style="list-style-type: none"> • Conditioning/holding unit • Water supply system • Effluent Treatment Plant • Desalination Plant • Road System • Power Supply and Backup Generator 	Govt Led: Fisheries Department	Usage of conditioning unit by private players importing the seaweeds	Common infrastructures are built and managed for the smooth operations of the complete hub 1

Target...

- Top countries in seaweed exports
- Making India a leading exporter of Seaweed within next 10 years
- India – 42nd rank with value of USD 7.6 Lakhs





Thank You!