Inland Aquatic Resources and Aquaculture Division

Overview

The **Inland Aquatic Resources and Aquaculture Division** is responsible for the management and sustainable utilization of inland aquatic resources and habitats throughout Sri Lanka. The division leads groundbreaking work in aquaculture development, particularly in ornamental fish breeding, sea cucumber cultivation, and freshwater prawn culture.

This division plays a pivotal role in enhancing livelihoods in rural communities through aquaculture technology transfer, establishing buy-back systems with exporters, and conducting regular training programs for farmers and entrepreneurs.

Leadership & Contact

Head of Division

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Research Staff

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Key Functions & Responsibilities

Aquaculture Development

- Environmental assessment and management for aquaculture development projects
- Verification of culture technologies for commercial viability
- Development of site selection criteria for aquaculture operations
- Water quality management for aquaculture systems

- Disease prevention and management protocols
- Sustainable aquaculture practice promotion

Ornamental Fish Industry Support

- Selective breeding programs for high-value ornamental fish species
- Brood stock development and maintenance
- Breeding technology transfer to farmers
- Quality improvement through genetic selection
- Market-oriented production guidance
- Buy-back system coordination with exporters

Sea Cucumber Aquaculture

- Sea cucumber hatchery operations and seed production
- Larval rearing technology development
- Live feed culture for sea cucumber larvae
- Grow-out technology for commercial production
- Farmer training on sea cucumber cultivation
- Demonstration programs for stakeholders

Shrimp and Prawn Culture

- Freshwater prawn (*Macrobrachium rosenbergii*) culture technology
- Shrimp farming technology verification
- Hatchery management for crustacean species
- Pond preparation and water quality management
- Feed management and nutrition research
- Disease diagnosis and treatment

Mollusc and Other Species

- Mollusc culture technology development
- Artemia production for live feed requirements
- Brackishwater fish culture research
- Integrated multi-trophic aquaculture systems
- Value addition opportunities for farmed species

Services Offered

Farmer Support Services

- **Brood Stock Supply:** High-quality ornamental fish brooders issued to farmers
- **Technical Training:** Regular training programs on disease management, nutrition, and culture techniques
- **Disease Diagnosis:** Laboratory services for disease identification in farmed fish
- **Water Quality Testing:** Analysis of pond water for optimal culture conditions
- **Technical Advisory:** On-farm consultation and problem-solving support

Seed Production

- Sea cucumber seed (spat) production and distribution
- Ornamental fish fry and fingerling supply
- Quality assurance for seed stock
- Seasonal availability coordination
- Farmer registration for seed allocation

Training & Extension

- Hands-on training at regional research centers
- Demonstration of breeding and culture techniques
- Fish feed preparation workshops
- Disease management training sessions
- Business planning for aquaculture entrepreneurs
- School and university student training programs

Buy-Back System

The division facilitates a innovative buy-back system connecting:

- Fish exporters seeking consistent quality supplies
- Small-scale farmers needing guaranteed markets
- NARA providing technical quality assurance
- Rural development through income generation

Current Research Projects & Programs

Sea Cucumber Breeding Program

Comprehensive Hatchery Technology Development

This flagship program addresses:

- Holothuria scabra (sandfish) breeding technology
- Larval rearing protocols optimization
- Live feed (microalgae, rotifers) culture systems
- Hatchery management demonstration for universities
- Seed production for farmer distribution
- Integration with wild stock conservation efforts

The program is particularly significant given the global depletion of wild sea cucumber stocks and the growing international demand for these high-value aquaculture products.

Ornamental Fish Selective Breeding

KOI Carp Breeding Program

- Development of high-quality color varieties
- Genetic selection for desirable traits
- Brood stock maintenance at regional centers
- Distribution of improved varieties to farmers
- Quality standardization for export markets

Angel Fish Breeding

- Multiple variety development (Gold, Silver, Marble, Black Lace)
- Consistent production protocols
- Farmer training on breeding techniques
- Market demand alignment

Other Species Programs

- Fighter fish (Betta splendens) selective breeding
- Rosy barb color enhancement
- Sword tail variety development
- Malawi cichlid breeding
- Tin Foil barb culture technology

Freshwater Prawn Culture Optimization

- Hatchery technology refinement
- Nursery management improvement
- Grow-out pond design and management
- Feed optimization for cost reduction
- Polyculture with compatible species
- Value addition and marketing strategies

Disease Management Research

- Identification of common diseases in ornamental fish farms
- Development of treatment protocols
- Preventive management strategies
- Water quality correlation with disease incidence
- Farmer education on biosecurity
- Rapid response diagnostic services

Facilities & Infrastructure

Aquaculture Research Center (Headquarters)

Located at NARA Crow Island, Colombo 15:

- Modern aquaculture research facilities
- Multiple breeding tanks and hatchery systems
- Controlled environment rooms for larval rearing
- Live feed culture units
- Wet laboratory for water quality analysis
- Demonstration facilities for training

Sea Cucumber Hatchery

Specialized facilities including:

- Broodstock conditioning tanks
- Spawning and fertilization areas
- Larval rearing tanks with flow-through systems
- Microalgae culture rooms
- Rotifer culture facilities
- Settlement tanks for post-larvae

- Nursery systems

Regional Research Centers

Rekawa Regional Research Centre

- KOI carp selective breeding facility
- Angel fish breeding units
- Training facilities for farmers
- Lagoon fishery research station

Panapitiya Regional Research Centre

- Ornamental fish breeding center
- Feed development laboratory
- Disease diagnostic services
- Farmer support hub for Western Province

Kalpitiya Regional Research Centre

- Brackishwater aquaculture research
- Coastal aquaculture technology
- Mangrove-aquaculture integration studies

Major Achievements

- Established successful sea cucumber hatchery technology for Sri Lanka
- Developed buy-back system benefiting hundreds of rural farmers
- Produced thousands of high-quality ornamental fish brooders for farmers
- Conducted training programs reaching thousands of participants
- Contributed to ornamental fish export industry growth
- Pioneered selective breeding programs for local varieties
- Established regional support network for farmers
- Integrated aquaculture with rural livelihood development

Collaboration & Partnerships

The division collaborates with:

- Ornamental fish exporters and industry associations
- Department of Fisheries and Aquatic Resources
- National Aquaculture Development Authority (NAQDA)
- University departments of aquaculture and zoology
- International aquaculture research institutes

- NGOs promoting rural development
- Private sector aquaculture businesses
- Farmer cooperatives and associations

Impact on Rural Livelihoods

Economic Empowerment

- Income generation for rural families through ornamental fish farming
- Foreign exchange earnings through export industry support
- Employment creation in aquaculture sector
- Entrepreneurship development among youth
- Women's participation in aquaculture enterprises

Technology Transfer

- Bridging research and farmer communities
- Practical demonstration of profitable technologies
- Reducing risk through proven methods
- Continuous technical backstopping
- Adaptation of technologies to local conditions

Capacity Building

- Training thousands of farmers in modern aquaculture
- Creating skilled workforce for aquaculture industry
- Building community-level expertise
- Empowering farmers with scientific knowledge
- Developing next generation of aquaculture practitioners

Future Directions

- Expansion of sea cucumber farming to coastal communities
- Development of marine ornamental fish breeding technologies
- Climate-resilient aquaculture systems research
- Genetic improvement programs for local species
- Integration of technology (IoT) in aquaculture management
- Value chain development for aquaculture products
- Export market diversification support
- Sustainable feed development using local ingredients

- Recirculating aquaculture system (RAS) technology
- Collaboration with international aquaculture research networks

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