

FRESHWATER AQUACULTURE PRODUCTION SYSTEMS IN PERI-URBAN AREA OF HCM CITY, VIETNAM

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I. CONTENT

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2. Cultured fish species
3. Freshwater aquaculture systems
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PRESENT STATUS OF THE AQUACULTURE IN PERI-URBAN AREA HCM CITY

Potential area for aquaculture development: 32,000 ha

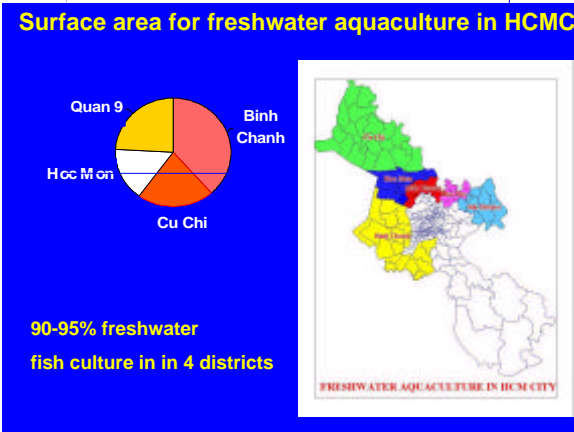
- Pond, reservoir, canal in freshwater : 3.000 ha
- Deep rice field : 21.000 ha
- Brackish swamp : 3.500 ha
- Tidal flat : 4.000 ha

5500 ha to 6000 ha are used for aquaculture

- Freshwater fish culture: 1000 – 1200ha
- Brackish water fish culture: 3000 – 3500ha
- Shellfish production in tidal flat: 1500 – 2000ha

Development trend in freshwater aquaculture in HCMC

Year	Aquaculture areas (ha)	Area increase/decrease ratio ¹ (%)	Production (tons)	Production increase/decrease ratio ¹ (%)
1990	1.300		4.339	
1991	1.227	- 5.62	4.979	+ 14.75
1992	1.240	+ 10.60	5.200	+ 4.44
1993	1.080	- 12.90	4.800	- 7.69
1994	1.100	+ 1.85	4.050	- 15.63
1995	1.010	- 8.18	3.678	- 9.19
1999	998	- 0.99	3.945	+ 10.75



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II. Cultured fish species in peri-urban of HCMC

English name	Vietnamese name	Scientific name
Freshwater shrimp	Tom Cang xanh	<i>Macrobrachium rosenbergii</i>
Grass carp	ca tram co	<i>Ctenopharyngodon idellus</i>
Mrigal carp	ca troi	<i>Cirrhinus mrigala</i>
Silver carp	ca me trang	<i>Hypophthalmichthys molitrix</i>
Common carp	ca chep	<i>Cyprinus carpio</i>
Tilapia	ca ro phi	Hybrid (<i>Oreochromis niloticus</i> x <i>O. mossambicus</i>)
Red tilapia	ca dieu hong	Hybrid
Clarias catfish / walking catfish	ca tre lai	Hybrid (<i>Clarias macrocephalus</i> x <i>C. gariepinus</i>)
Pangasius catfish / Mekong catfish	ca tra	<i>Pangasius hypophthalmus</i>
Giant gouramy	ca tai tuong	<i>Osphronemus gorami</i>
Kissing gouramy	ca huong / ca Mui	<i>Helostoma teminski</i>
Snakeskin gouramy	ca Sac ran	<i>Trichogaster pectoralis</i>

- Tilapia the most popular species
 - High tolerance to water environment
 - Feeding on natural feed
 - Constraint for further development
 - Low priced
 - Low growth rate
- The next preference species:
 - Giant gouramy
 - Common carps
- Red tilapia, new species for culture in peri-urban

II. B AQUATIC PLANT

- In sewage fed area, aquatic plant is planted for vegetables supplied for human and livestock
 - Duckweed (*Limnna* sp.)
 - Water spinach
 - Lotus
 - Water mimosa

III. AQUACULTURE SYSTEMS IN PERI-URBAN

- ≠ **Monoculture**
- ≠ **Polyculture**
 - ≠ **Integrated fish culture with other farming activities**
 - with pig raising
 - with poultry raising
 - with aquatic plants
 - Lotus
 - Water mimosa
- ≠ **Rice-fish culture**
- ≠ **Ornamental fish production**

MONO-FISH CULTURE

- Culture of only one fish species in ponds
- Usually for high priced fish
- Feeding with formulated feed, laughter house waste
- Red tilapia, Giant gouramy
- Culture in pond, cage
- High invest

POLY-CULTURE

- At least 2 fish species
- Make best use of natural feed
- Tilapia, chinese carp, indian carp
- Low priced fish production

INTEGRATED FISH FARMING

- Originated from China
- Integration with livestock (Pig, chicken, duck)
- Integration with aquatic plants (lotus, water mimosa, water spinach)

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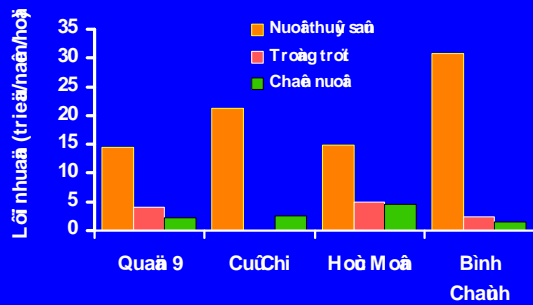
RICE-FISH CULTURE

- Tilapia, common carp are two species for rice-fish culture
- No feeding
- Yield 200-300 kg/ha
- Sewage fed rice field can get 1000 kg/ha

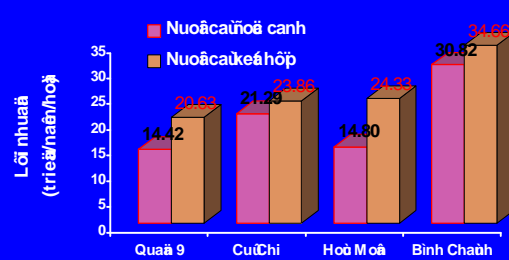
ORNAMENTAL FISH PRODUCTION

- More than 68 fish species were cultured for ornemention
- The most species : *Casassius anratus*; *Pterophyllum Scalare*; *Symphysodon sp.*; *Scatophagus argus* ; *Toxotes chatareus* and *Balantiachetilos melannopteus*

Benefit comparison from fish culture, livestock and cropping



Benefit comparison from monoculture or polyculture



1. PROBLEM FOR DEVELOPMENT

- ☹️ Poor farmer cannot afford to extend their activities
- ☹️ Lack of techniques of culture
- ☹️ Water pollution makes their activities more difficult
- ☹️ Price and market is not stable

EXPECTATION

- ☹️ Attend technical class
- ☹️ Introduction of new species suitable for the peri-urban
- ☹️ Reduce the water pollution
- ☹️ Stablize price
- ☹️ Credit for farmers

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V. Conclusion

- In peri-urban, aquaculture including fish and aquatic plant is common practice to make use of sewage
- Integrated fish farming get more benefit than monoculture
- Farmers usually get difficulty in credit access, techniques, water source...