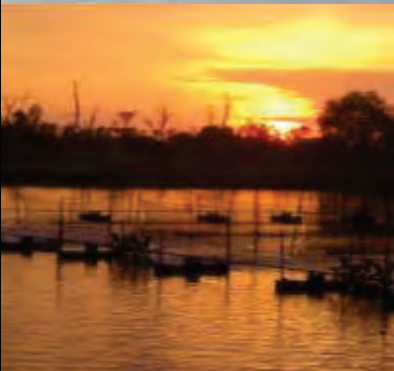




Inland Aquaculture in Thailand



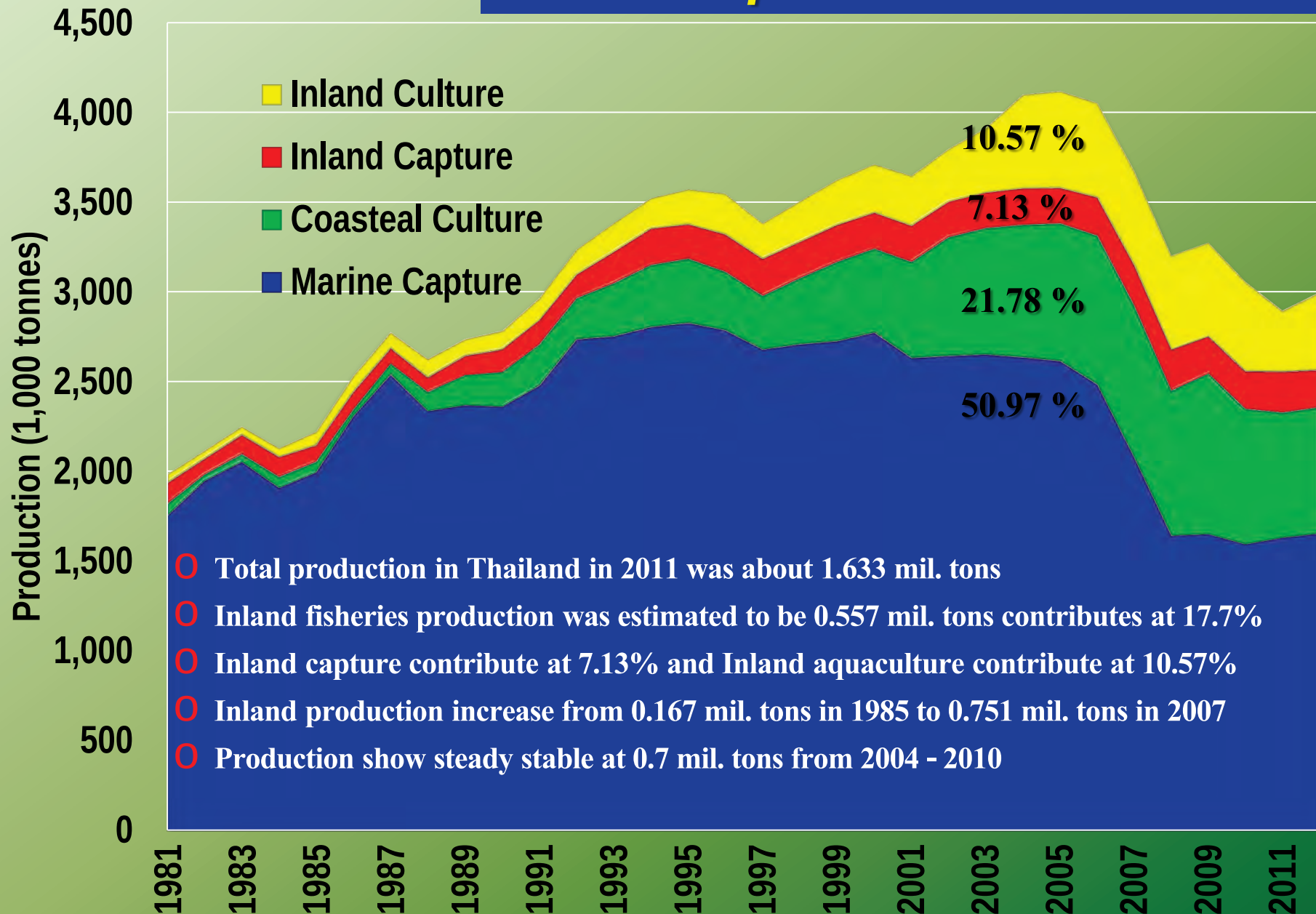
Unit : **1,000** tonnes/year

Inland Fisheries Production

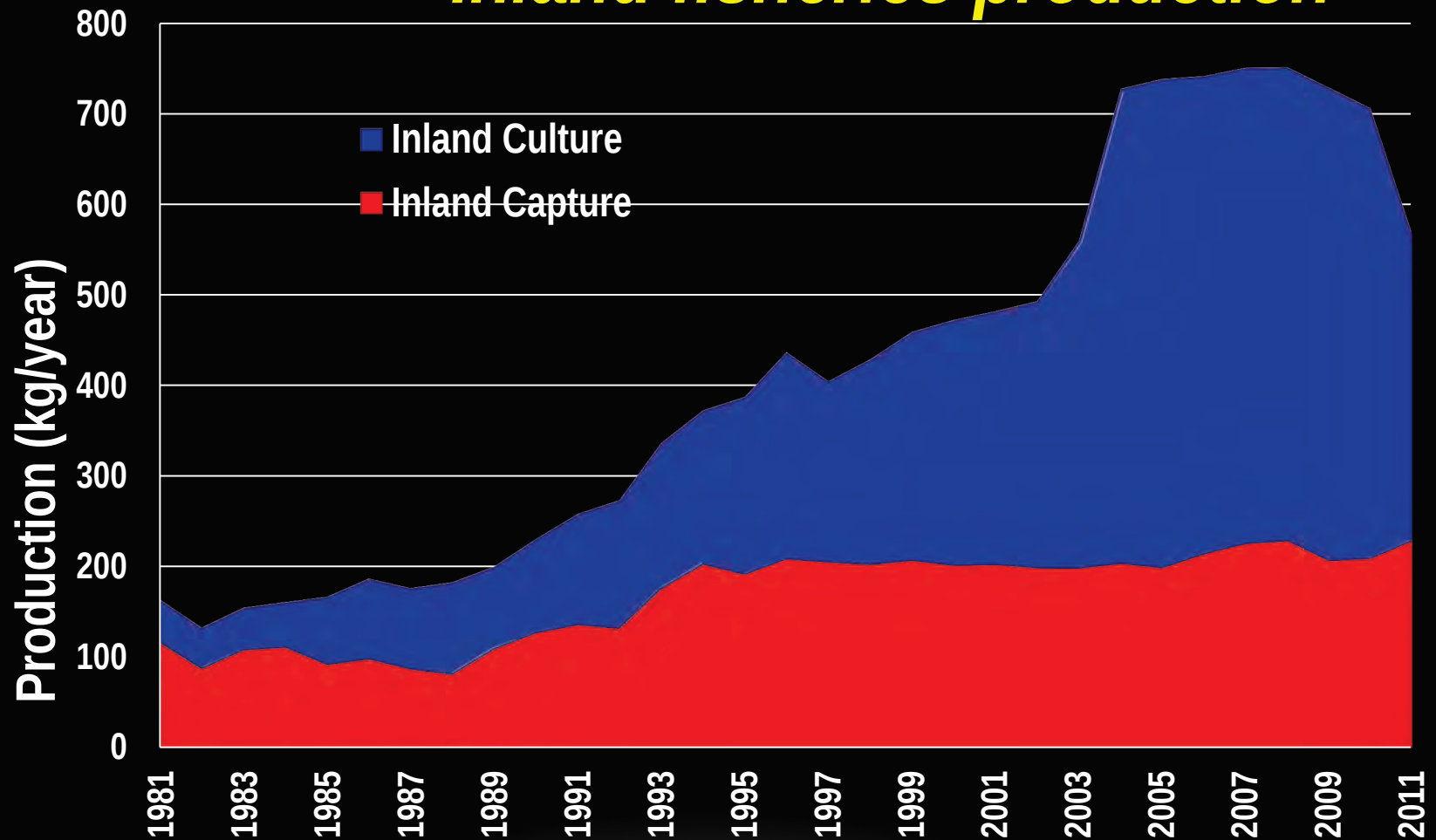
- Total production in Thailand in 2011 was about 1.633 mil. tons
- Inland fisheries production was estimated to be 0.557 mil. tons contributes at 17.7%
- Inland capture contribute at 7.13%
- Inland aquaculture contribute at 10.57%
- Inland production increase from 0.167 mil. tons in 1985 to 0.751 mil. tons in 2007
- Production show steady stable at 0.7 mil. tons from 2004 - 2010

Year	Marine Capture	Coastal Culture	Inland Capture	Inland Culture
1985	1,997.2	60.6	92.2	75.2
1986	2,309.5	39.1	98.4	89.3
1987	2,540.0	61.9	87.4	89.8
1988	2,337.2	108.9	81.5	102.1
1989	2,370.5	168.7	109.1	91.7
1990	2,362.2	193.2	127.2	103.8
1991	2,478.6	230.4	136.0	122.7
1992	2,736.4	229.3	132.0	142.1
1993	2,752.5	295.6	175.4	161.6
1994	2,804.4	345.8	202.6	170.4
1995	2,827.4	357.5	191.7	196.0
1996	2,786.1	326.0	208.4	228.7
1997	2,679.5	299.7	205.0	200.2
1998	2,709.0	367.6	202.3	226.9
1999	2,725.2	441.2	206.9	252.6
2000	2,773.7	467.0	201.5	271.0
2001	2,631.7	534.5	202.5	279.7
2002	2,643.7	660.1	198.7	294.5
2003	2,651.2	703.3	198.4	361.1
2004	2,635.9	736.3	203.7	523.7
2005	2,615.6	764.7	198.8	539.4
2006	2,484.8	826.9	214.0	527.4
2007	2,079.4	845.3	225.6	525.1
2008	1,644.8	808.3	228.6	522.5
2009	1,652.6	894.7	206.8	521.9
2010	1,597.2	755.5	209.3	496.6
2011	1,633.3	698.0	228.5	338.8

Fisheries production in Thailand



Inland fisheries production



- During 2004 – 2010 Inland aquaculture production was 2-2.5 time higher than in land capture production.
- In this period inland aquaculture has more develop and provide nearly 2 time higher than previous time.

INLAND AQUACULTURE PRODUCTION

By Region

In 2009

Region	No of Farm	Area (rai)	Production (tons/yr)	Value (mil B/yr)
Northern	134,193	141,946	122,587	5,239,105
Northeast	275,326	334,533	95,856	4,486,039
Central plain	26,604	78,839	64,202	2,290,552
Eastern	22,459	184,606	78,339	3,484,250
Western	25,443	198,473	83,947	5,418,724
Southern	48,462	69,311	51,667	2,626,252
Total	532,487	1,007,709	496,599	23,544,922

INLAND AQUACULTURE

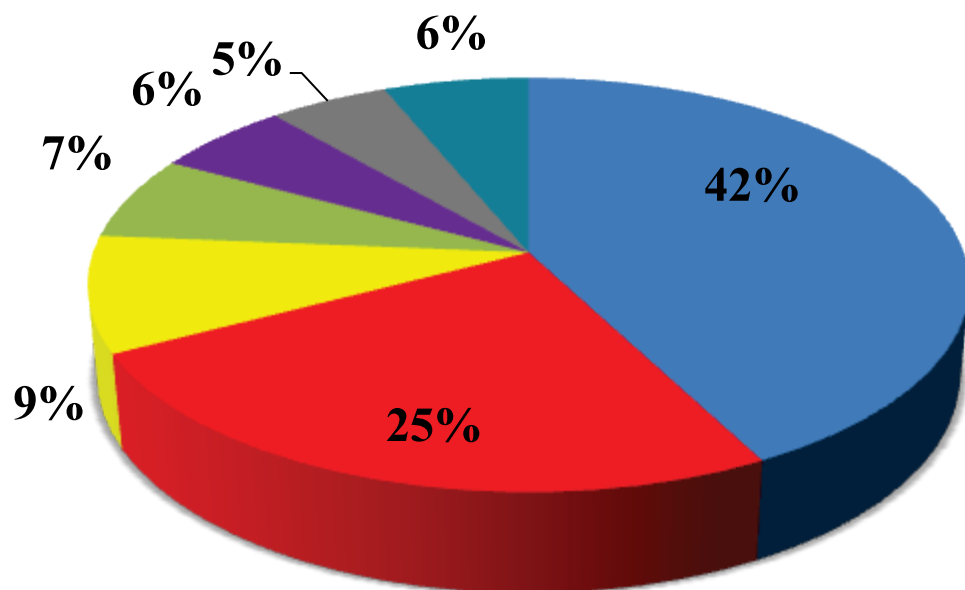
Area of Fish Farm by aquaculture system

Aquaculture system in 2009	Area (rai)	Percentage (%)
Pond culture	946,735	91.69
Paddy Field	73,601	7.13
Ditch culture	12,677	1.23
Cage culture	549	0.05
Total	1,032,561	100

SPECIES PRODUCTION FROM AQUACULTURE

(TONS/YEAR IN 2009)

■ *Tilapia* ■ *Clarias* ■ *Silver barb* ■ *Gourami*
■ *Pangasius* ■ *Giant prawn* ■ *Misc. sp*



- Tilapia	221,042 tons
- Clarias	130,064 tons
- Silver barb	47,231 tons
- Gourami	34,220 tons
- Pangasius	30,200 tons
- Giant Prawn	26,785 tons
- Misc.	32,338 tons
Total	521,880 tons

Year	2007	2008	2009	2010	2011
Total	525,095.20	522,463.44	521,879.59	496,598.56	338,800.00
Nile tilapia	213,811.83	217,245.63	221,042.65	204,680.09	139,263.00
Common Carp	4,136.08	4,063.73	3,094.38	2,416.70	1,875.00
Thai Silver Carp	56,288.44	54,284.05	47,230.45	42,049.20	34,117.00
Skin gourami	33,977.96	28,477.56	34,220.80	34,418.54	15,915.00
Chinese major carps	271.88	285.02	291.43	353.34	137.00
walking catfish	136,574.69	136,517.35	130,062.97	140,763.32	95,375.00
Striped snake-head	8,102.08	8,268.77	7,751.85	4,340.04	4,525.00
Striped catfish	21,009.44	21,471.61	30,200.43	27,026.46	15,252.00
Java tilapia	88.61	66.61	44.71	46.53	112.00
Sand Gobies	72.10	99.28	104.17	114.42	67.00
Giant gourami	4,850.88	4,660.43	4,838.14	4,533.20	2,730.00
Rohu	1,551.53	1,307.37	1,458.53	1,167.97	1,530.00
Grey featherback	1.37	1.30	1.26	1.11	3.00
Swam peel	19.11	3.48	3.48	-	8.00
Black Ear catfish	642.23	621.24	721.95	428.74	432.00
Moonbeam gourami	28.28	4.25	4.78	4.53	20.00
Climbing perch	812.44	573.08	404.12	485.87	357.00
Giant snake-head fish	168.74	324.79	398.39	298.99	175.00
Mrigala	970.38	538.52	568.78	500.27	774.00
Other Fish	5,708.99	6,246.00	7,649.34	5,945.48	3,867.00
Giant prawn	32,147.50	33,189.27	26,785.10	22,350.39	19,347.00
Frog	1,534.76	1,605.11	2,066.12	1,827.99	1,155.00
Soft-shell turtles	2,325.88	2,608.99	2,935.76	2,845.38	1,764.00

Inland aquaculture production in 4 system

2011	Production	%Pond	%Paddy field	%Ditch	%Cage
Total	338,800	87.21	3.94	2.28	6.57
Nile tilapia	139,263	82.23	2.49	0.84	14.44
Common Carp	1,875	89.95	9.91	0.13	0.01
Thai Silver Carp	34,117	82.55	3.33	13.73	0.39
Skin gourami	15,915	55.44	44.37	0.14	0.05
Chinese major carps	137	93.40	6.34	0.26	
walking catfish	95,375	97.28	0.12	1.43	1.17
Striped snake-head	4,525	99.25		0.51	0.24
Striped catfish	15,252	98.41	0.02	0.94	0.64
Giant prawn	19,347	100			
Sand Gobies	67	56.31			43.69
Giant gourami	2,730	92.53		3.07	4.40
Rohu	1,530	90.80	0.91	8.22	0.08
Other Fish	4,299	88.48	0.78	1.54	9.20
Climbing perch	357	84.23	12.23	3.52	0.03
Giant snake-head	175	95.00		0.02	4.98
Mrigala	774	95.63	0.11	2.87	1.39

Tilapia Cage Culture

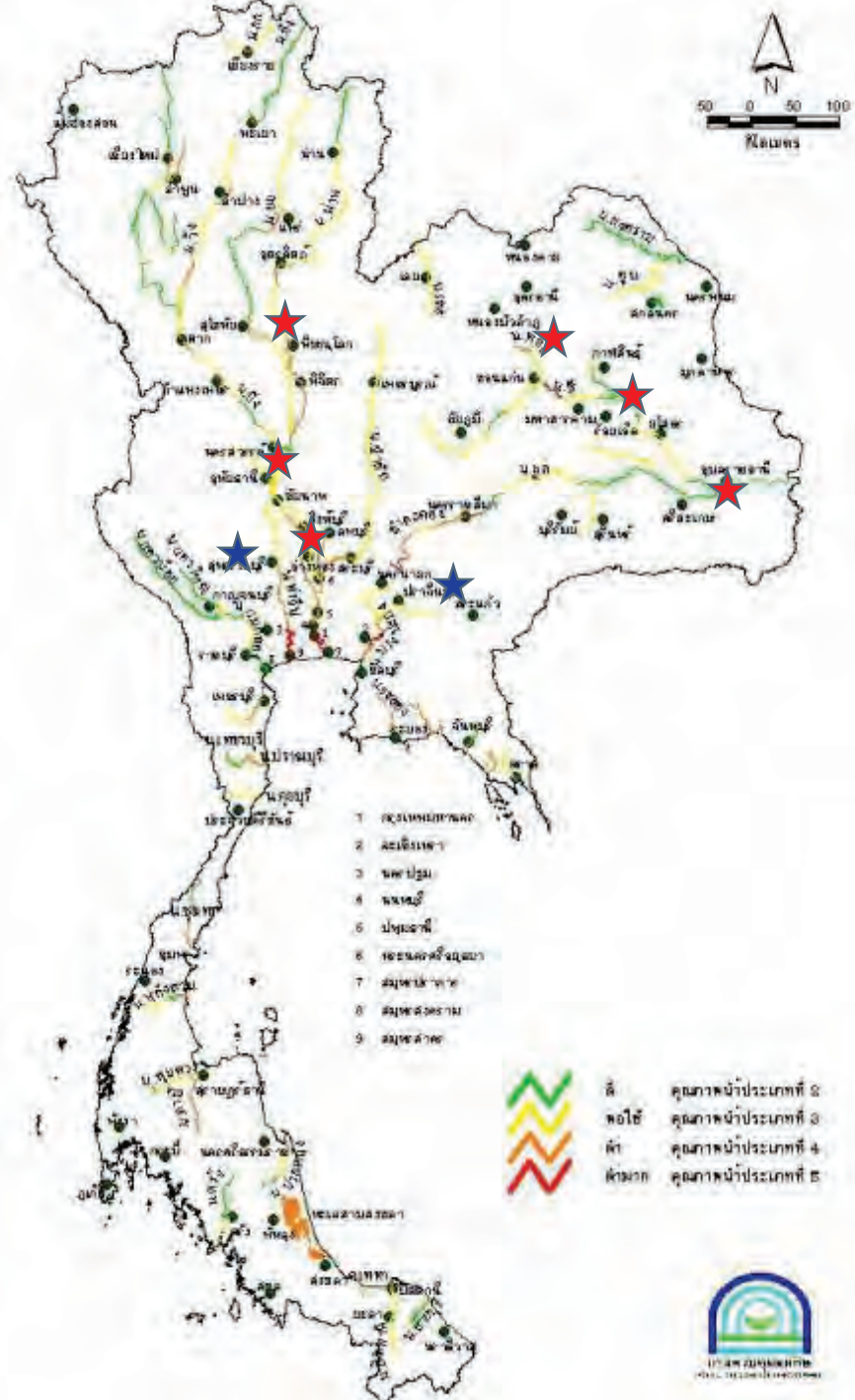




In 2009

No. of Cage	6,462 farm
Area	878,400 m²
Total production	36,238 tons/yr
Tilapia	32,960 tons = 90.95%

แผนที่แสดงเขตเหมาะสมสำหรับการเพาะเลี้ยงสัตว์น้ำของประเทศไทย



Cage culture

Cage size

$$3 \times 3 \times 3 \text{ m} = 27 \text{ m}^3$$

$$3 \times 5 \times 3 \text{ m} = 45 \text{ m}^3$$

$$4 \times 4 \times 3 \text{ m} = 48 \text{ m}^3$$

$$5 \times 5 \times 3 \text{ m} = 75 \text{ m}^3$$

Stocking	25 - 35	fish/m ³
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Survival rate	85 - 99	%
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Rearing period	90 - 130	days
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Production	23 - 34	kg/m ³
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บ้านเลิงใต้



สำหรับ

PREVENTION MEASUREMENT

Department of Fisheries set regulation for inland cage culture as:

- Open system (River, Canal) $\leq 2\%$ of waterbody area in that zone
- Close system (Reservoir) $\leq 0.25\%$ of average water surface area

Basic of those limitation base on Phosphorus concentration calculation at 25 mg/m³ which research on year 2000

DEPARTMENT OF POLLUTION CONTROL

DPC set regulation of waste water from inland aquaculture

Inland aquaculture farm area >10 rais have to treated their water before drained out to the natural water body

Standard of waste water control from aquaculture

BOD	≤ 20 mg/L
Total Nitrogen	≤ 4.0 mgN/L
Total Phosphorus	≤ 0.5 mgP/L
Suspended Solid	≤ 80 mg/L

*Thank you
for your
attention*

