



Agriculture et
Agroalimentaire Canada

Agriculture and
Agri-Food Canada



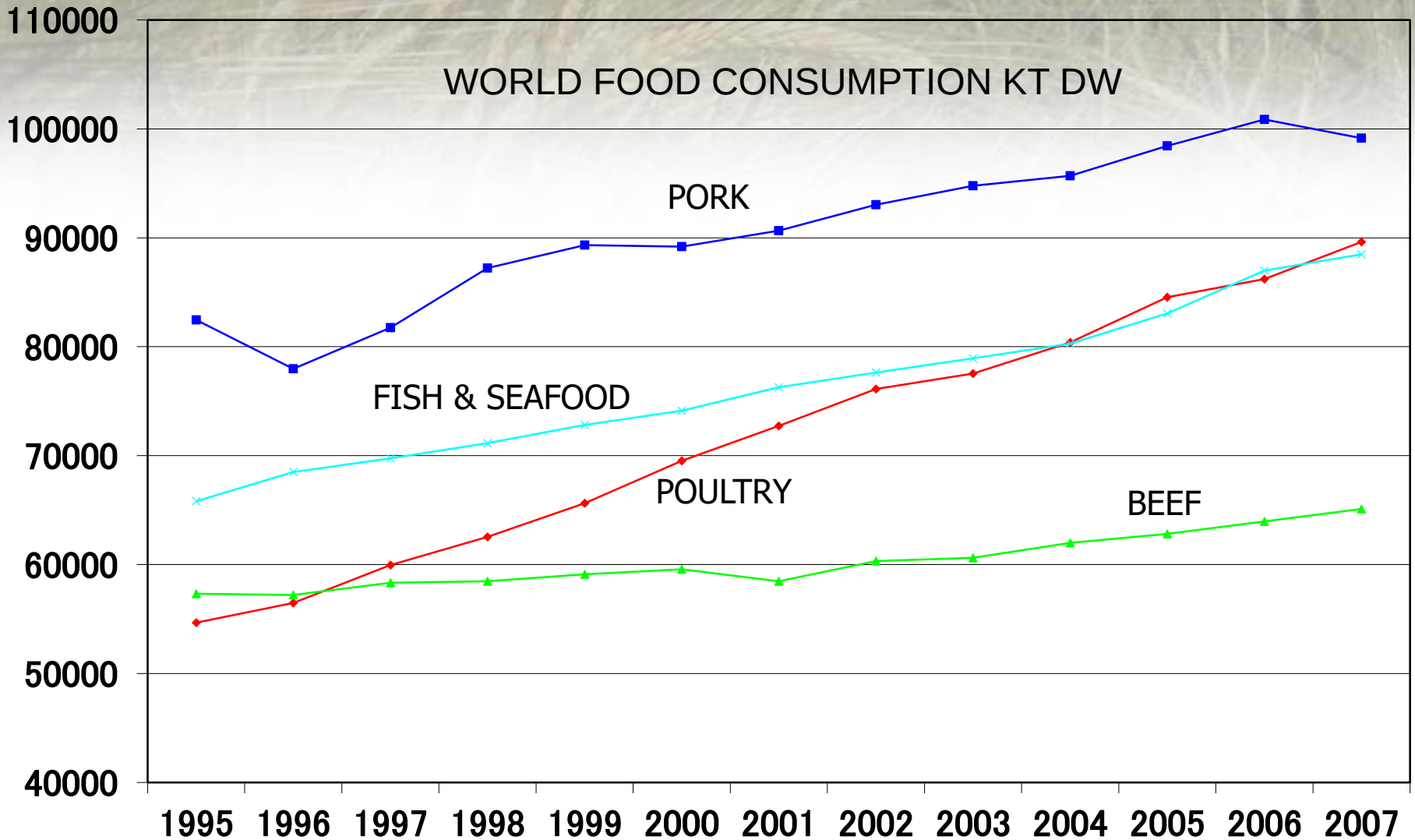
FISH & SEAFOOD CONSUMPTION IN EMERGING AND DEVELOPPING COUNTRIES

PIERRE CHARLEBOIS

"Changing demand in emerging & developing countries"
Tokyo, Japan

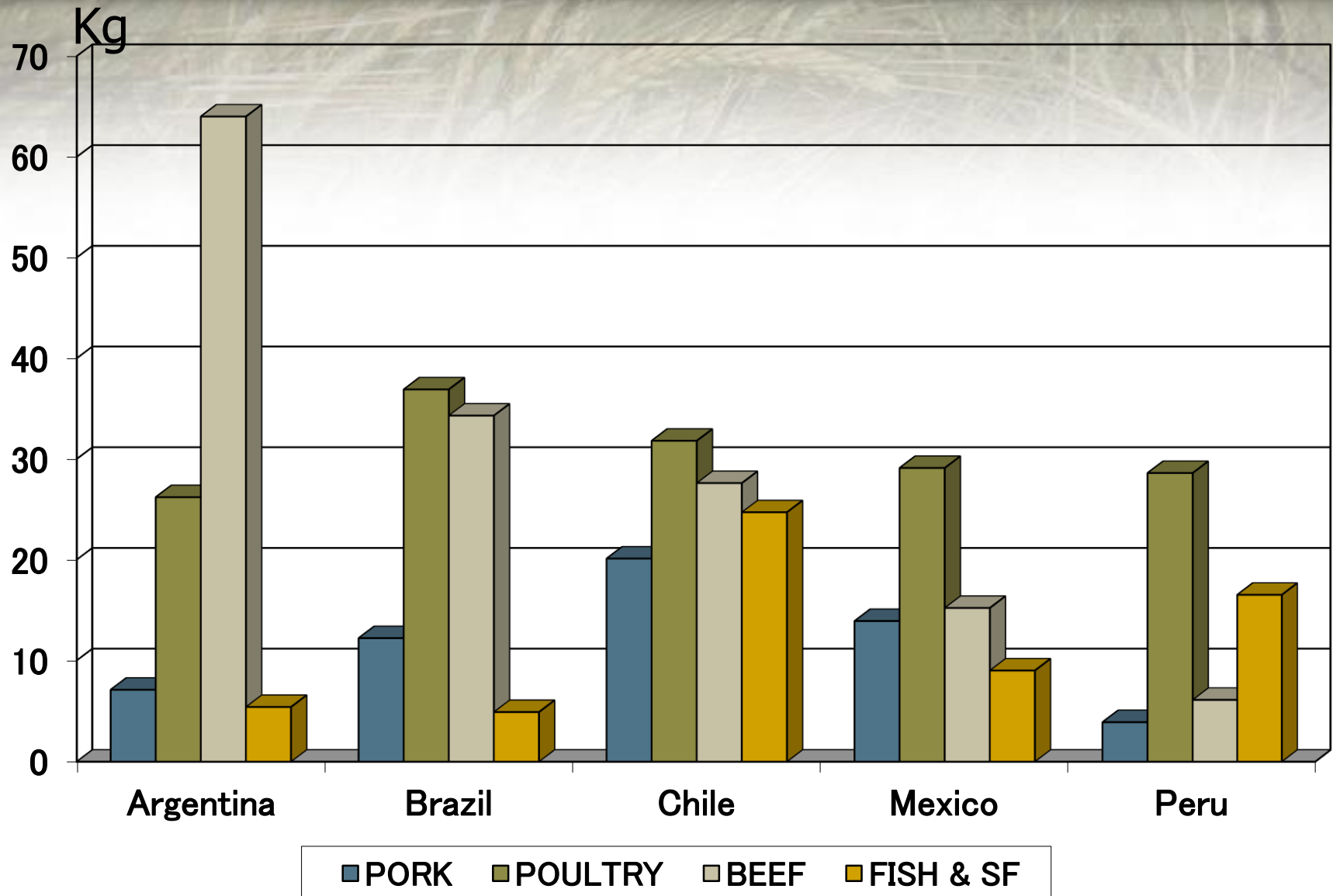
Canada 

FISH AND SEAFOOD FOOD CONSUMPTION IS A SIGNIFICANT SOURCE OF ANIMAL PROTEIN

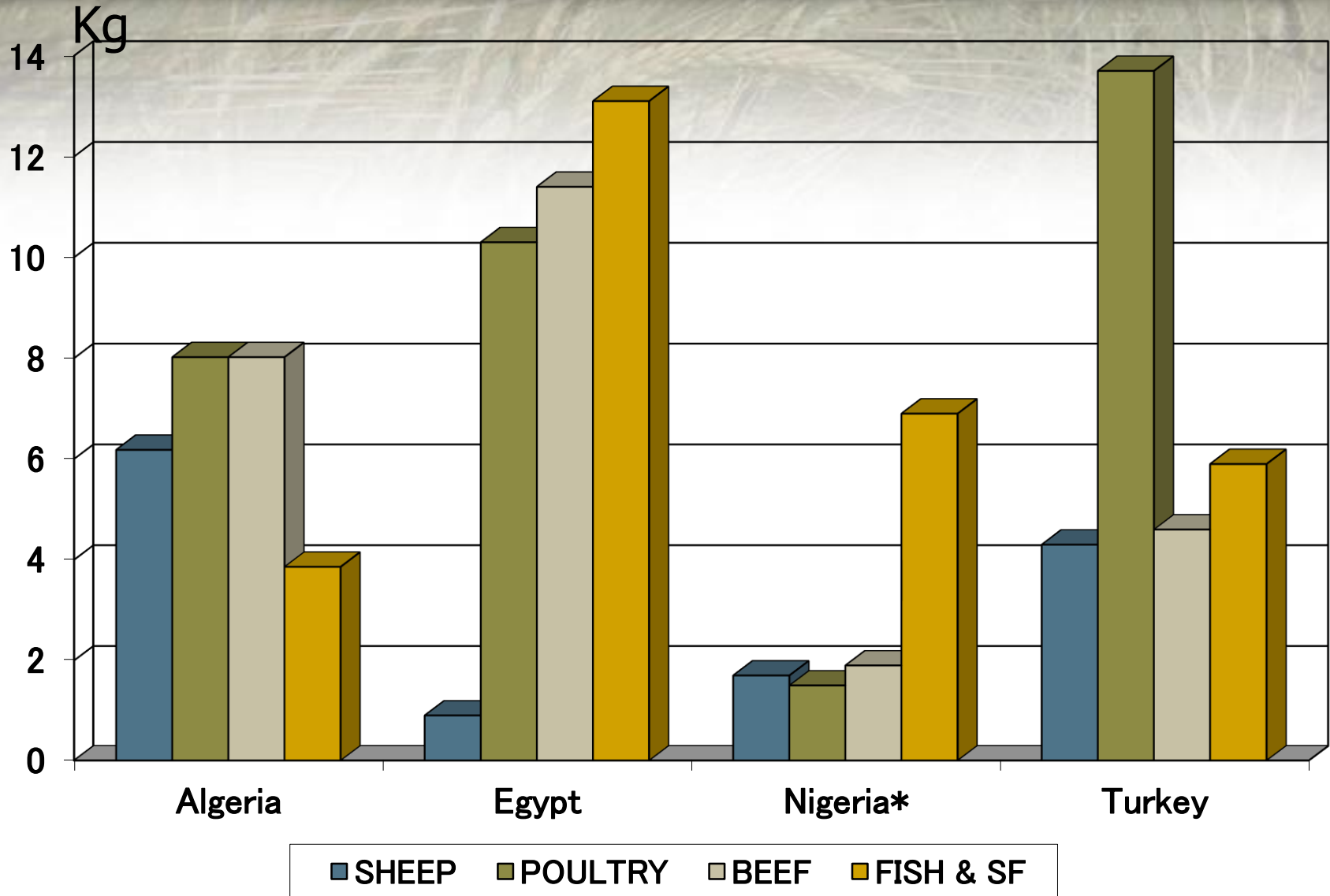


PER CAPITA MEAT CONSUMPTION IN LATIN AMERICAN COUNTRIES

(Average of 2005 to 2007 in kg dw basis)



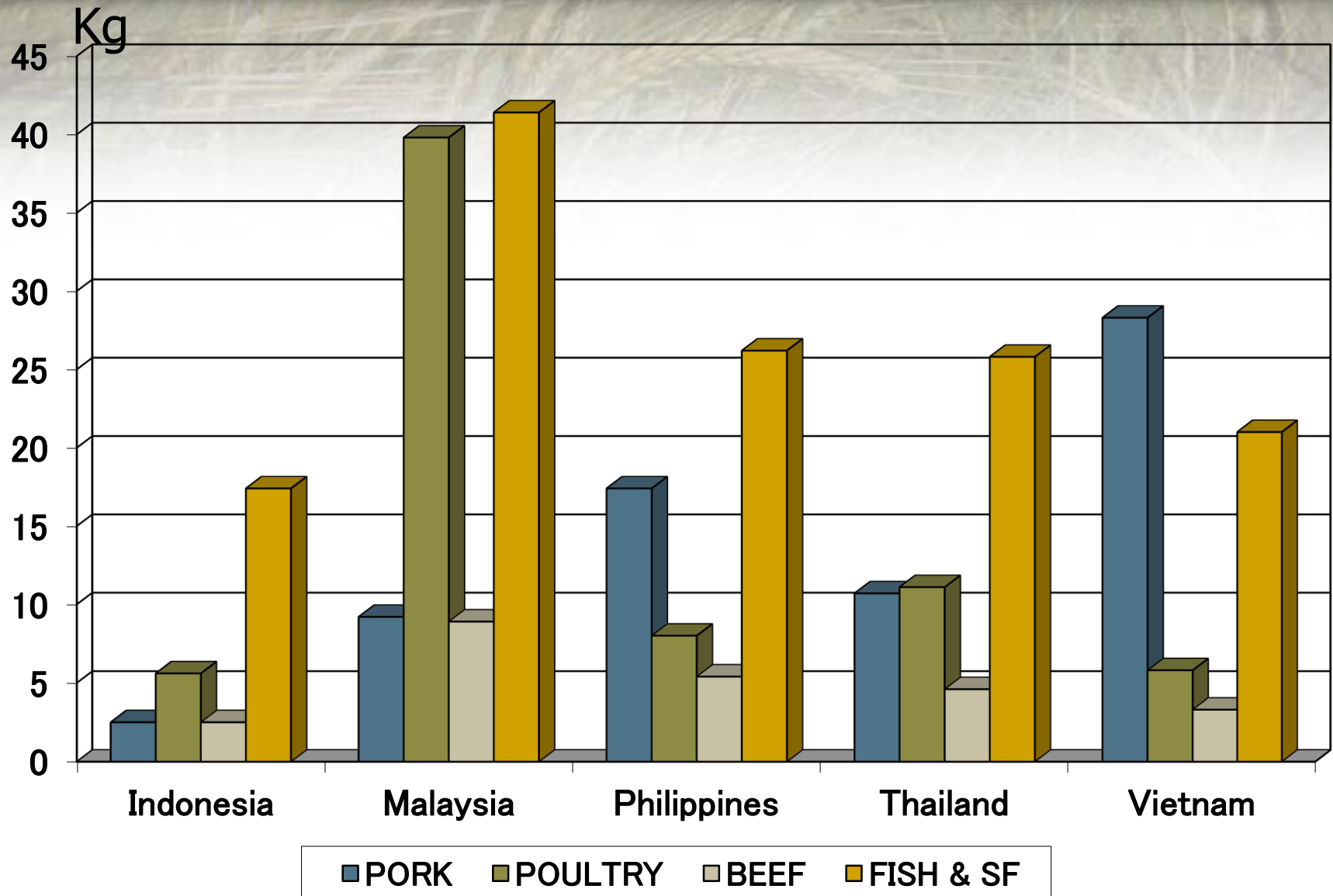
PER CAPITA MEAT CONSUMPTION IN MEDITERANEAN & AFRICAN COUNTRIES
(Average of 2005 to 2007 in kg dw basis)



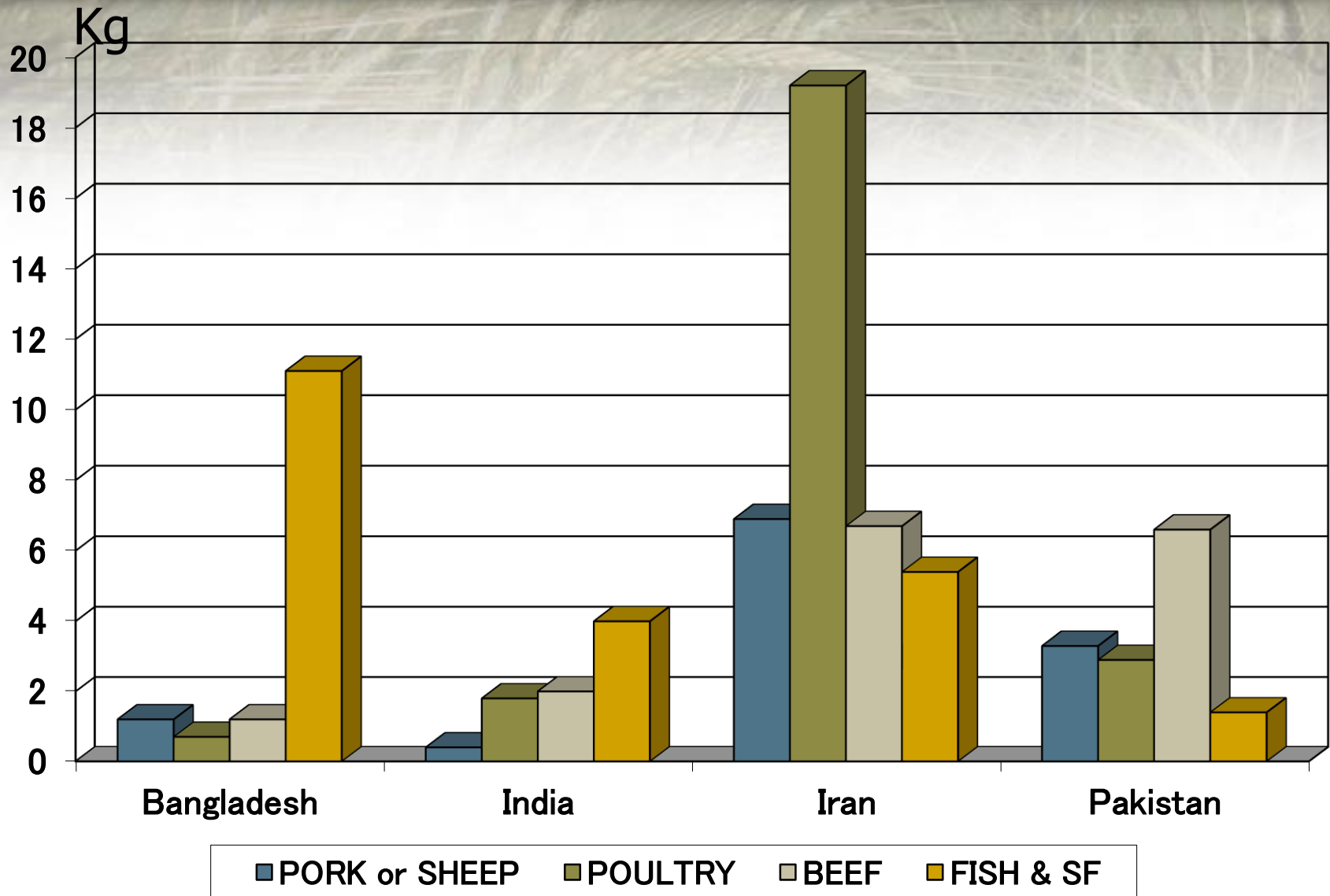
* Pork instead of sheep

PER CAPITA MEAT CONSUMPTION IN SOUTH EAST ASIAN COUNTRIES

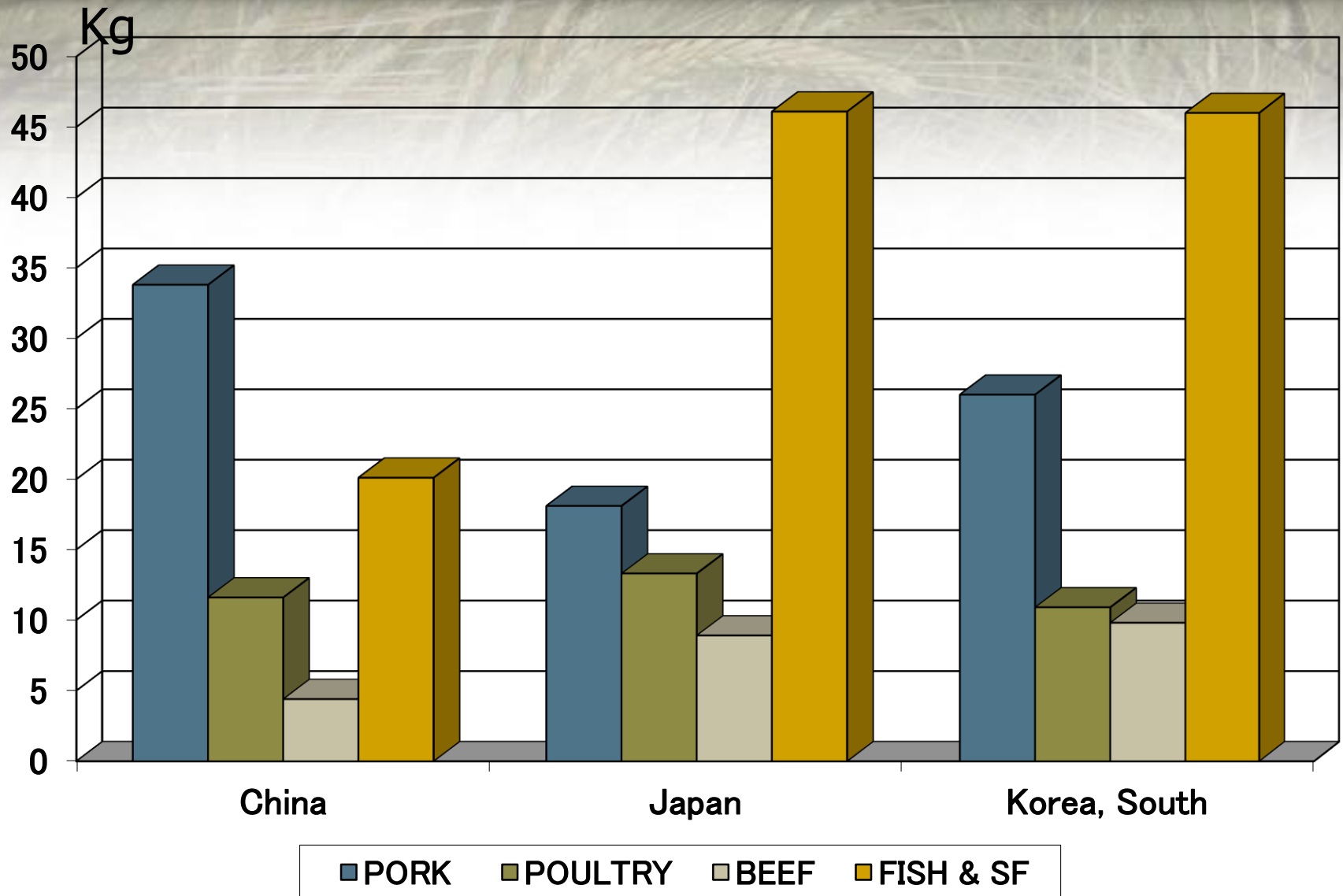
(Average of 2005 to 2007 in kg dw basis)



PER CAPITA MEAT CONSUMPTION IN CENTRAL ASIAN COUNTRIES ***(Average of 2005 to 2007 in kg dw basis)***



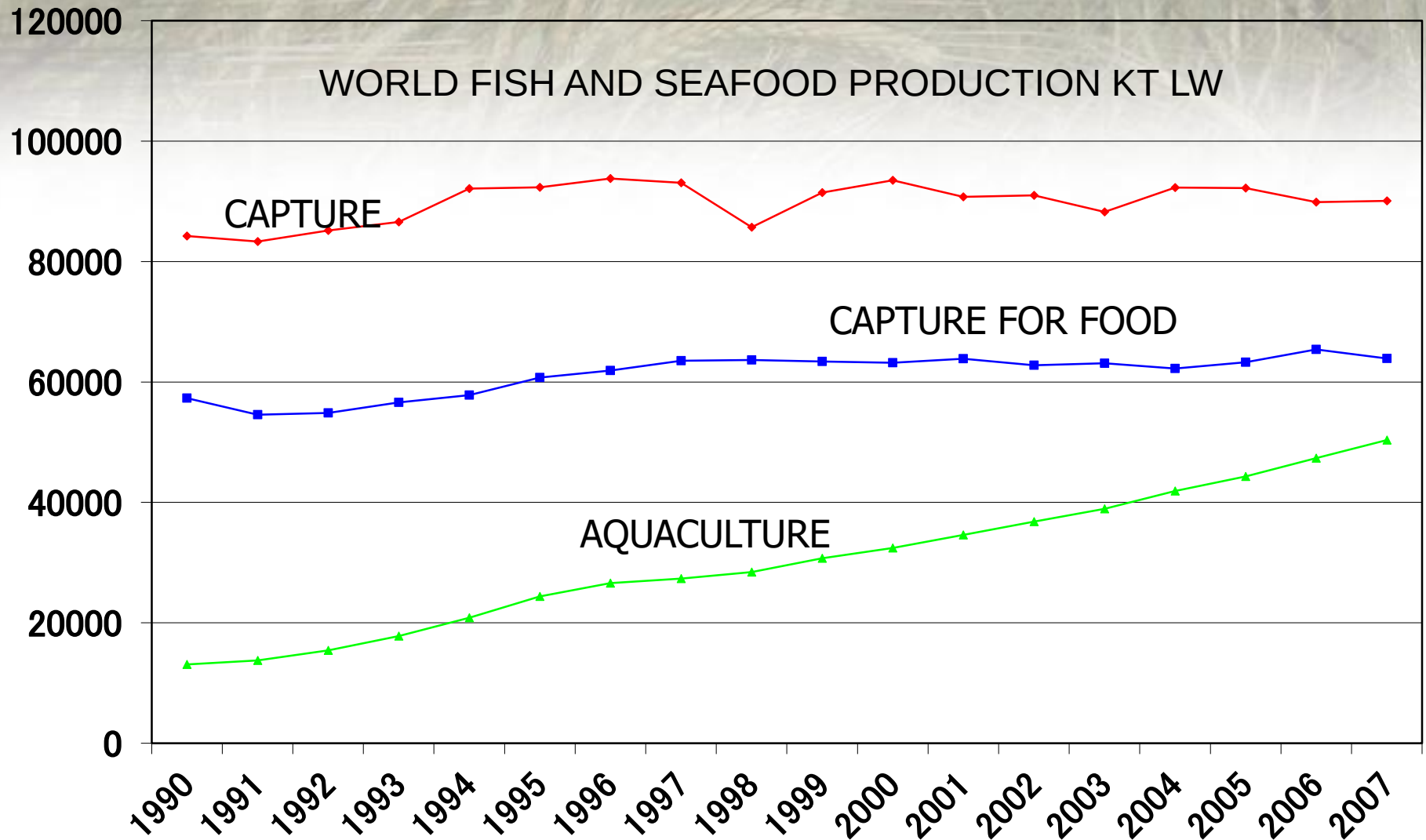
PER CAPITA MEAT CONSUMPTION IN NORTHERN ASIAN COUNTRIES ***(Average of 2005 to 2007 in kg dw basis)***



DEMAND ELASTICITIES & POPULATION GROWTH

COUNTRIES	OWN PRICE	INCOME	↗ POP %
BANGLADESH	-0.76	1.11	1.5
CHINA	-0.62	1.05	0.48
INDONESIA	-0.87	1.46	0.88
INDIA	-0.98	1.62	1.22
MALAYSIA	-0.98	0.9	1.37
PHILIPPINES	-1.41	1.09	1.57
THAILAND	-0.73	0.51	0.44

HAVING REACH THE OCEAN CAPACITY GROWTH COULD ONLY COME FROM AQUACULTURE



AQUACULTURE DEPENDENCY RATIO IN 2007 (%)

Argentina	1.1	Algeria	0.2
Brazil	22.2	Egypt	47.5
Chile	178	Nigeria	6.4
Mexico	12.3	Turkey	21.7
Peru	6.2	Bangladesh	40.2
Indonesia	25.6	India	52.6
Malaysia	12.0	Iran	30.7
Philippines	22.4	Pakistan	43.3
Thailand	71.7	China	90.0
Vietnam	78.9	Korea, South	20.0
World	43.8	Japan	10.6

SPECIES RAISED IN AQUACULTURE

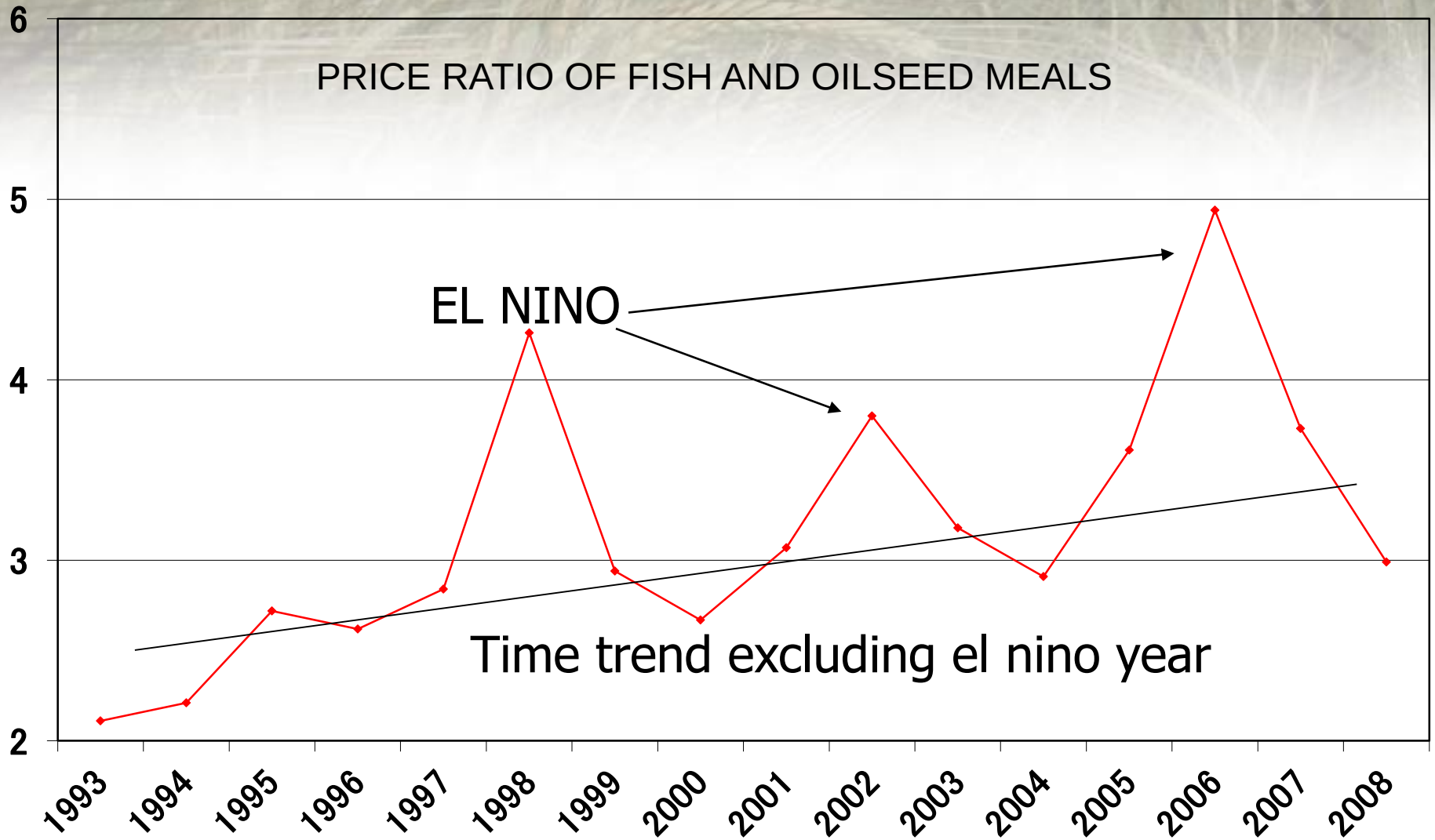
SPECIES	FEED	LAG	COUNTRIES
SALMON	FM,FL,CE	24 M	AUS,CAN,CHL,E27,NOR
RAINBOW TRUIT	FM,FL,CE	12-18 M	CHL,E27,IRN,NOR,TUR
CATFISH	FM,FL,CE	18-36 M	IDN,MYS,THA,USA
TILAPIA	FM,FL,CE	5 M	BRA,CHL,IDN,MYS,PHL,ECU,THA
SHRIMP	FM,FL,CE	4-14 M	BGD,CHN,E27,JPN,MEX,MYS,NOR PHL,ECU,THA,VNM
GRASS CARP	FM,FL,CE, OTH	24-36 M	CHN,EGY,PAK
OTHER CARP	FM,FL,CE, OTH	42-48 M	BGD,CHN,IDN,IRN,RUS
MUSSEL	NATURAL	18-24 M	AUS,CAN,KOR,NZL,PHL
OYSTERS	NATURAL	24 M	AUS,CAN,CHN,E27,KOR,USA
CLAM	NATURAL	12 M	CHN,E27,KOR,MYS,USA
SMALL SCALLOP	NATURAL	12 M	CHN
MILK FISH	FM,FL,CE	5 M	IDN,PHL
SEA BREAM & BASS	FM,FL,CE	12 M	E27,TUR
CRAYFISH	NATURAL	12 M	USA
SEA TRUIT	FM,FL,CE	24 M	RUS

FISH MEAL IMPORT DEPENDENCY RATIO IN 2007 (%)

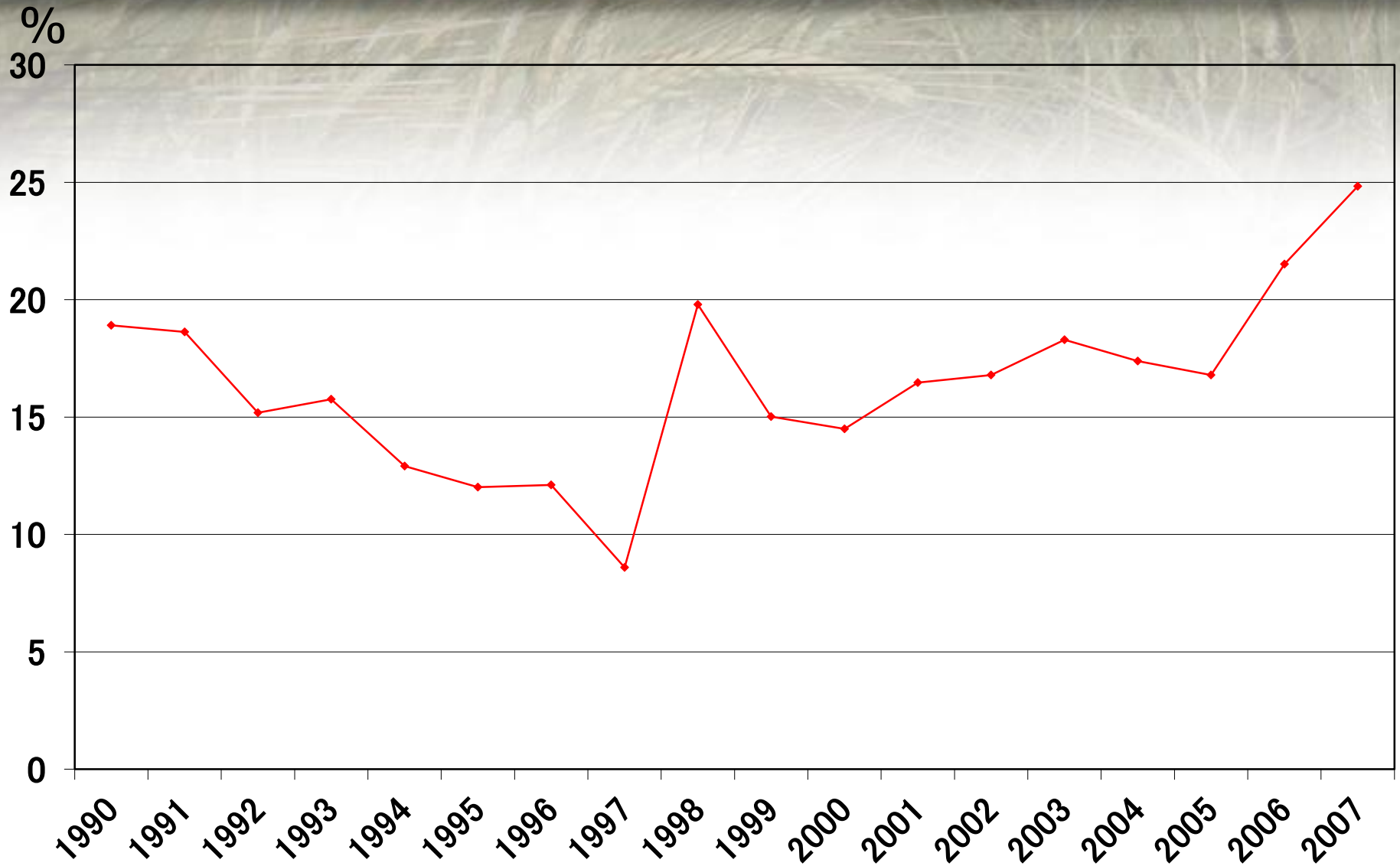
Argentina	20	Algeria	100
Brazil	17.5	Egypt	100
Chile	NA	Nigeria	100
Mexico	26.3	Turkey	87.6
Peru	NA	Bangladesh	98.7
Indonesia	56.5	India	80
Malaysia	41.4	Iran	2.2
Philippines	100	Pakistan	0
Thailand	5.3	China	62.3
Vietnam	100	Korea, South	100
World	NA	Japan	9.5

THE INCREASING DEMAND FOR FISH MEAL BY AQUACULTURE IS CHANGING THE PRICE RATIO

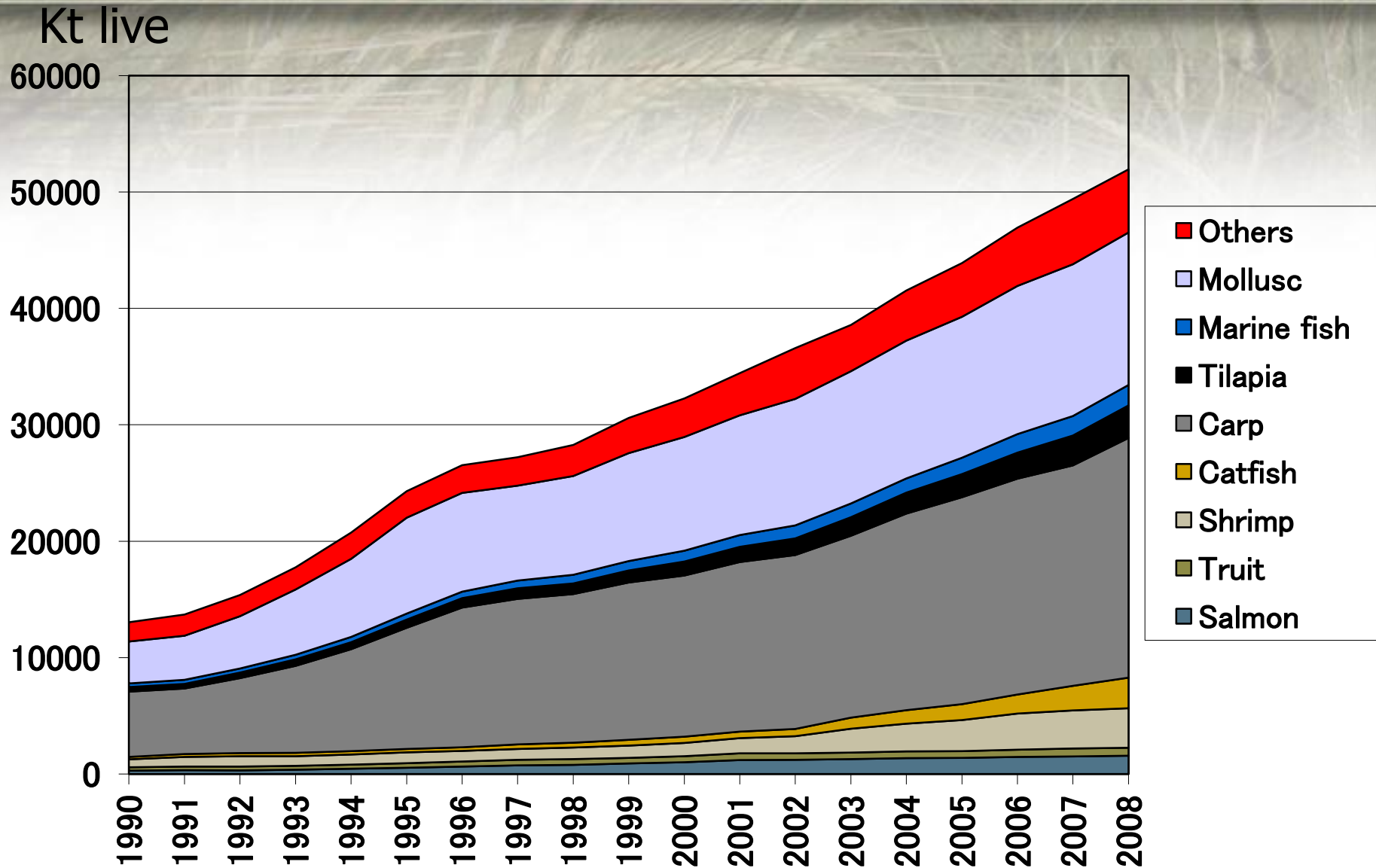
PRICE RATIO OF FISH AND OILSEED MEALS



AN INCREASING SHARE OF FISH MEAL PRODUCTION COMES FROM FISH RESIDUE



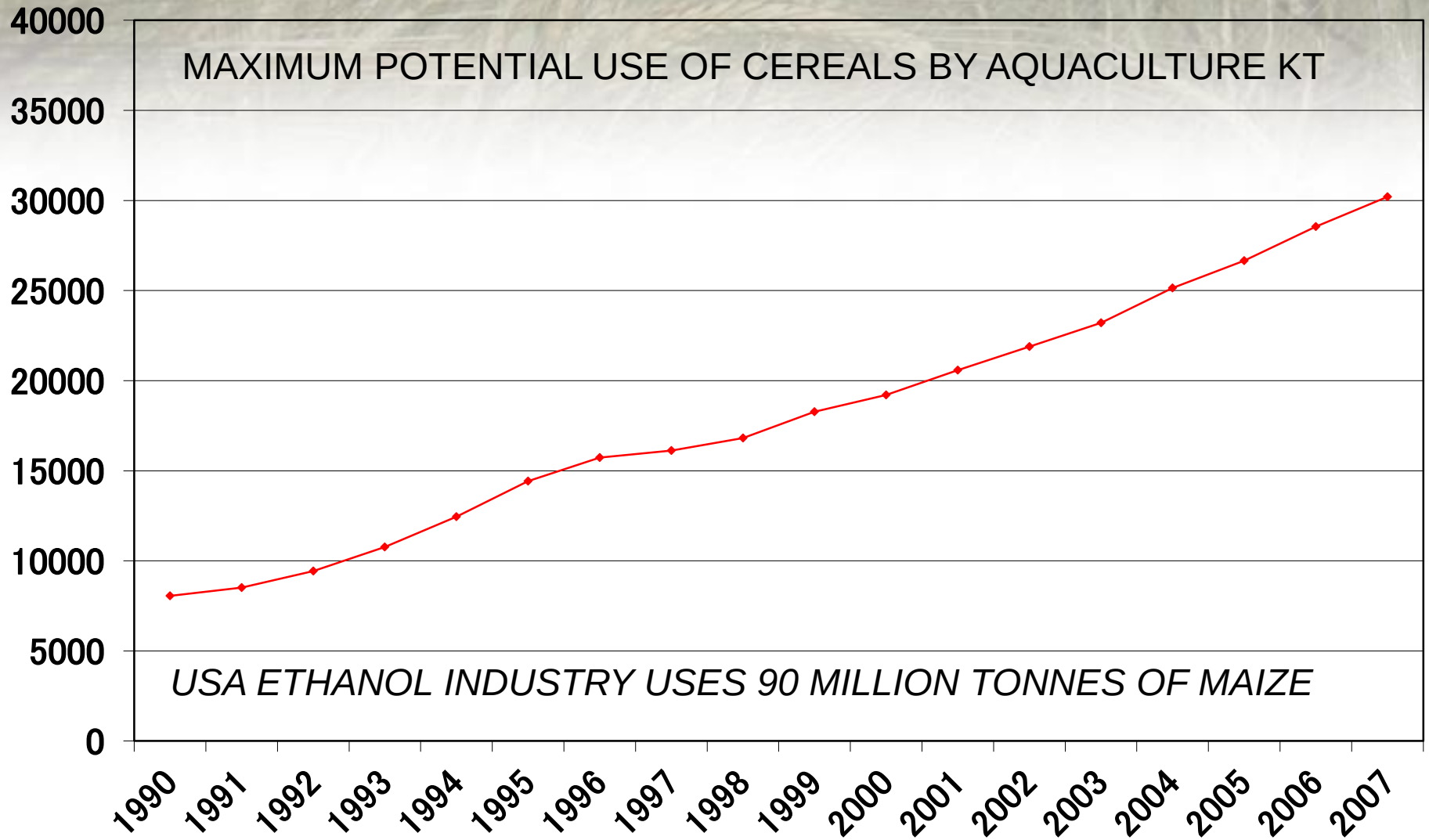
AQUACULTURE PRODUCTION BY MAIN SPECIES



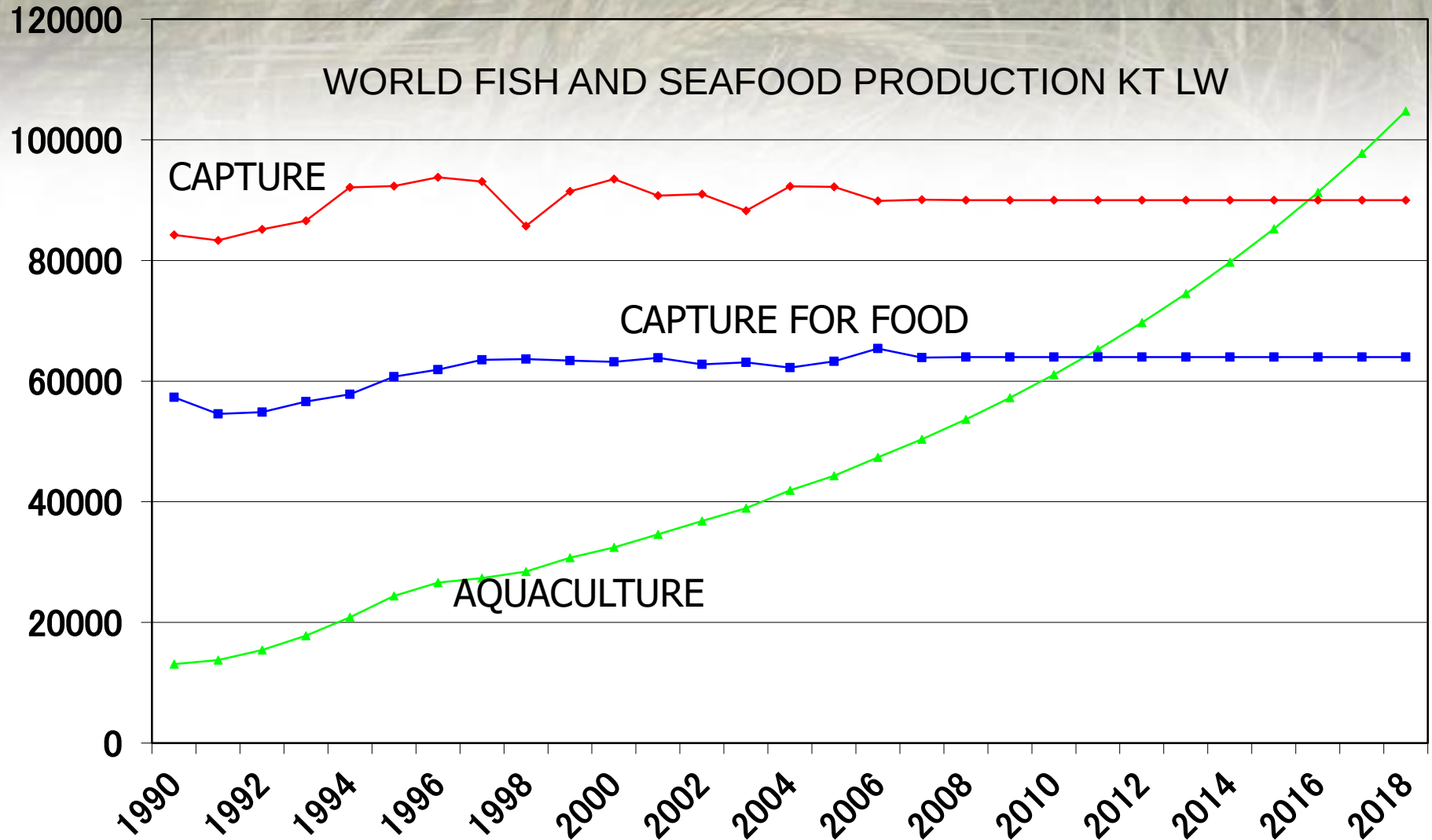
FISH THE BEST FEED CONVERTER

SPECIES	FCR	% CEREALS	%HIGH PROTEIN	% FISH OIL
SK STEERS	2 (6)	96	4	0
LK STEERS	3 (5)	94	6	0
HOGS	3.5-4	80	20	0
EGGS	2-2.2	71	29	0
CHICKEN	1.6-1.8	78	22	0
SALMON	1.25	50	30	20
TROUT	1.25	55	30	15
CATFISH	1.07	88.3	10	1.7
TILAPIA	1.38	93.5	6	0.5
SHRIMP	1.56	78	20	2
CARP	0.83	<95	5	0
MILK FISH	0.8	96	3	1

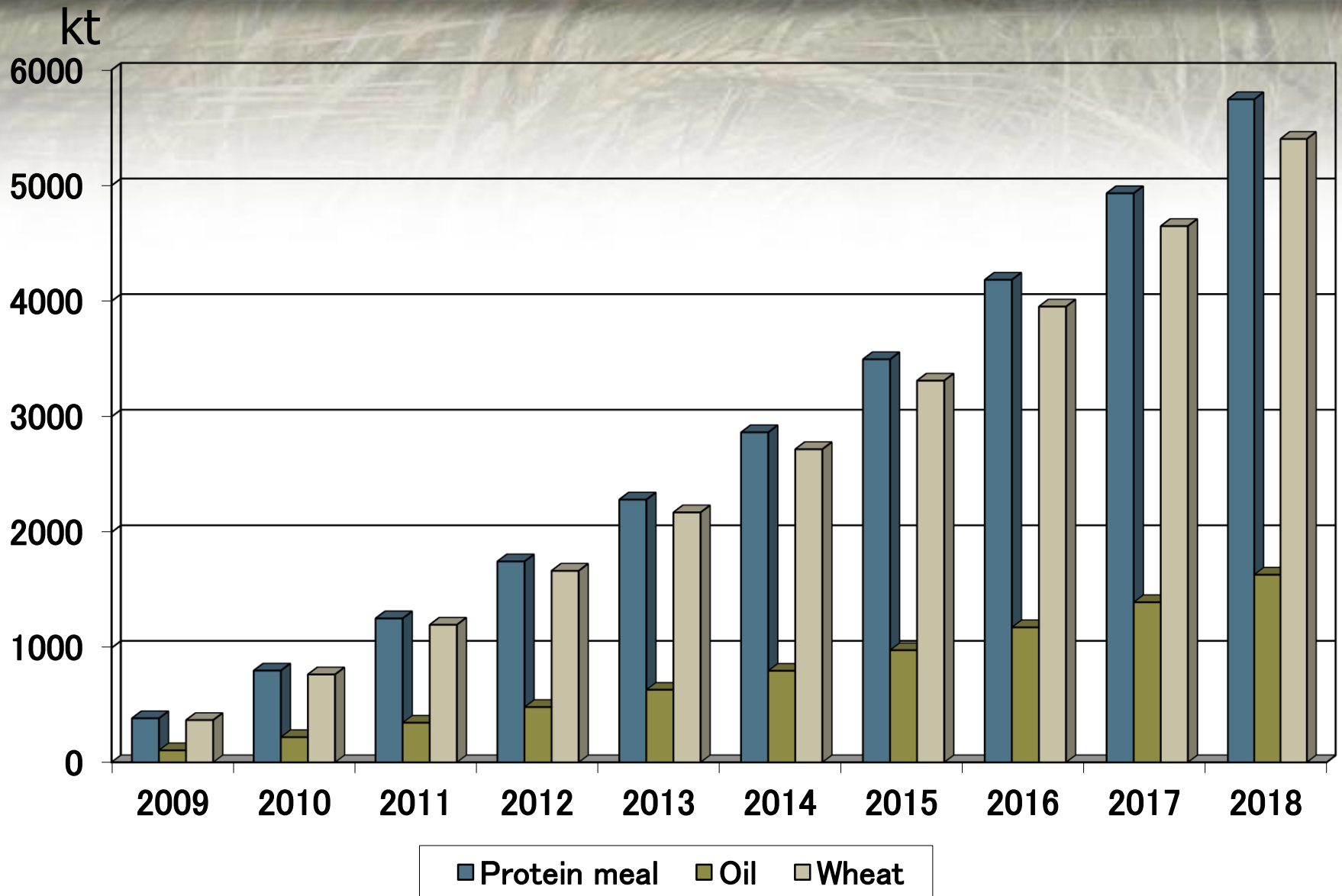
AQUACULTURE IS CONTRIBUTING TO THE UPWARD PRESSURE ON CEREALS PRICE



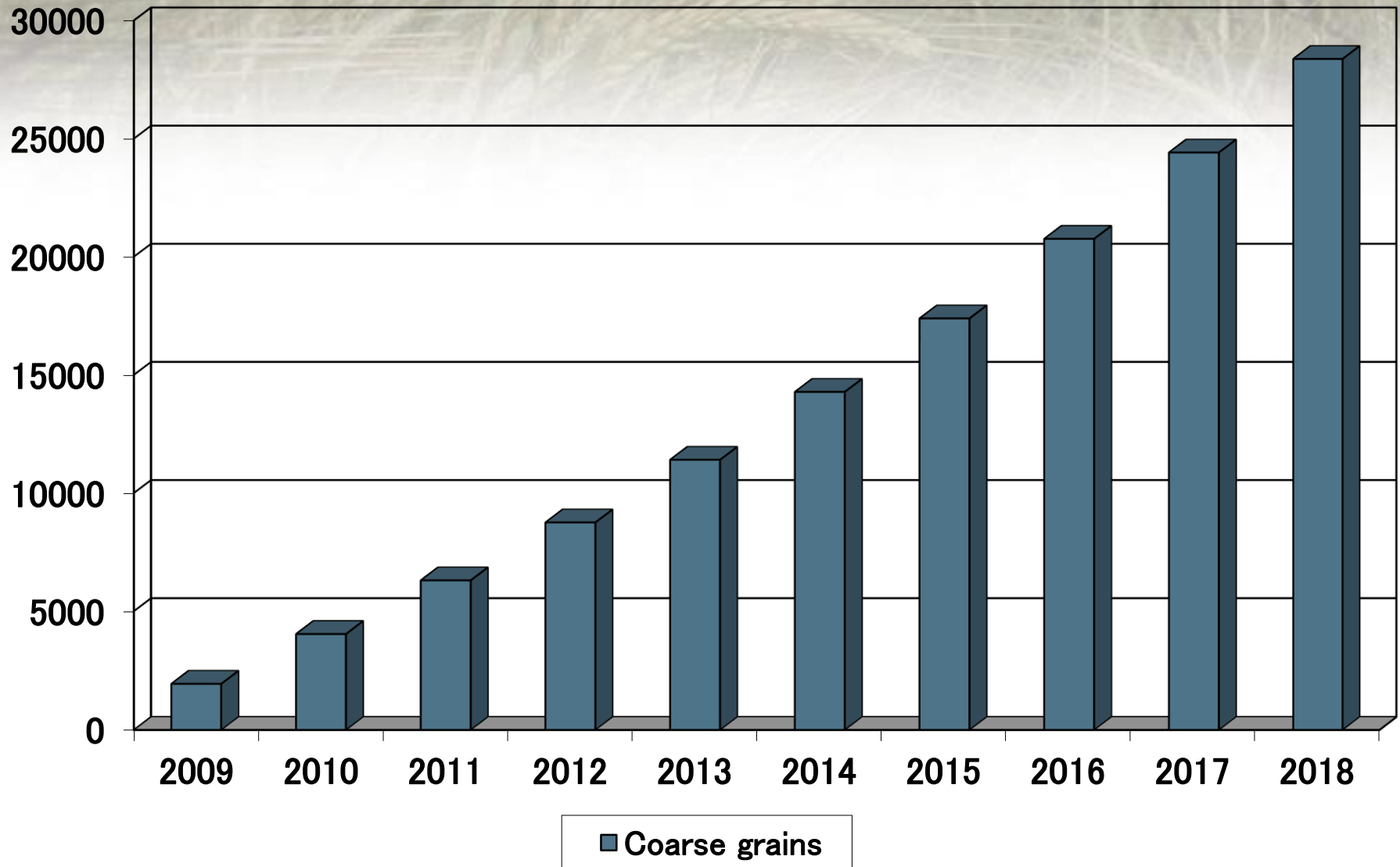
HAVING REACH THE OCEAN CAPACITY GROWTH CAN ONLY COME FROM AQUACULTURE



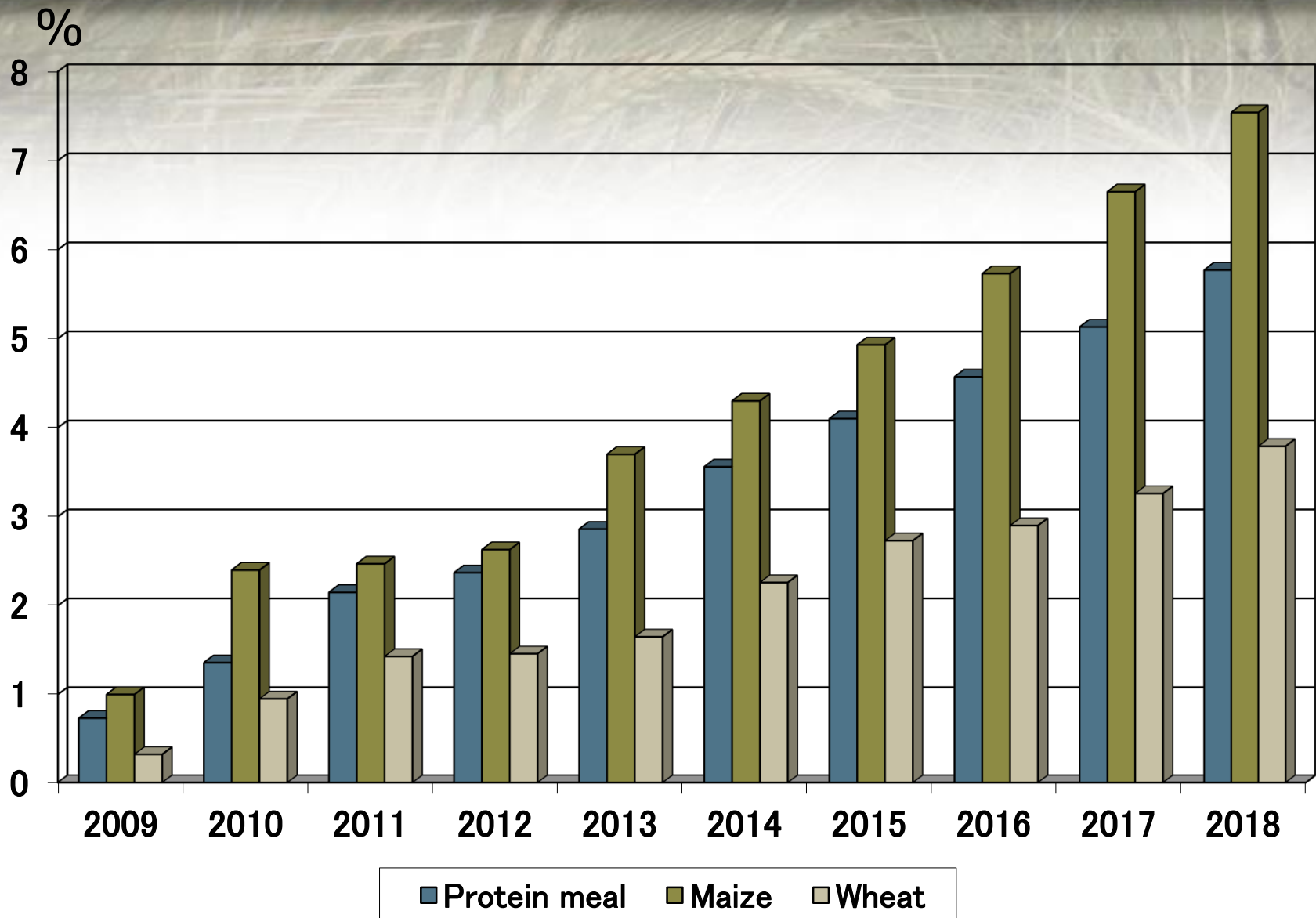
ADDITIONAL FEED DEMAND FROM THE AQUACULTURE SECTOR



ADDITIONAL COARSE GRAINS FEED DEMAND FROM THE AQUACULTURE SECTOR



IMPACT ON WORLD PRICES



IMPACT ON WORLD PRICES (contd)

