

IMPACT OF INCREASING SEA TEMPERATURES ON FOOD SECURITY

1. FOOD AVAILABILITY

SHIFTING MARINE HABITATS & SPECIES

- WARM WATER SPECIES MOVE POLEWARD/TO DEEPER WATER
- TROPICAL FISHERIES DECLINE
- TEMPERATE FISHERIES MAY GAIN, THEN STRESS

ALTERED MARINE ECOSYSTEMS

- CORAL BLEACHING & DEATH (loss of fish nurseries)
- REDUCED PHYTOPLANKTON & PRIMARY PRODUCTION
- FOOD WEB DISRUPTION

DECLINING FISH CATCH & AQUACULTURE

- LOWER MAXIMUM CATCH POTENTIAL
- STRESS ON AQUACULTURE (species mortality, reduced growth)

2. FOOD ACCESS

ECONOMIC LOSSES FOR COASTAL COMMUNITIES

- REDUCED INCOME FOR FISHERMEN
- JOB LOSSES IN FISHERIES & RELATED INDUSTRIES
- ECONOMIC INSTABILITY

HIGHER SEAFOOD PRICES

- SCARCITY LEADS TO INCREASED COSTS
- LOW-INCOME POPULATIONS UNABLE TO AFFORD

3. FOOD UTILIZATION (SAFETY & NUTRITION)

INCREASED DISEASES & TOXINS

- PREVALENCE OF MARINE PATHOGENS (e.g., *Vibrio*)
- HARMFUL ALGAL BLOOMS (HABs) & BIOTOXINS
- CONTAMINATION OF SEAFOOD

REDUCED NUTRITIONAL VALUE

- FISHERIES SHIFT TO SMALLER, LESS NUTRITIOUS SPECIES
- LESS ESSENTIAL FATTY ACIDS (DHA, EPA)

INCREASING
GLOBAL SEA
TEMPERATURES

RISE
+T°C

4. FOOD STABILITY

MORE FREQUENT EXTREME EVENTS

- MARINE HEATWAVES
- SEVERE STORMS & HURRICANES
- DISRUPTION OF SUPPLY CHAINS

LONG-TERM ECOSYSTEM DEGRADATION

- IRREVERSIBLE LOSS OF KEY SPECIES
- UNPREDICTABLE FUTURE SUPPLY
- COMPROMISED RESILIENCE

POTENTIAL CONSEQUENCES FOR HUMANITY

MALNUTRITION HUNGER POVERTY MIGRATION