

Climate change threatens fish supply

By PAUL ICAMINA
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CEBU CITY - Global warming means less fish on the table.

That's reason for concern to a country that consumes a lot more fish than the global average of 15 kilograms annually.

The 56 percent of Filipinos who live in coastal areas consume 43 kg a year; those inland consume 23 kg per annum. Marine resources, in fact, contribute up to 36 percent to food supply.

The figures – and the warning – come from Dr. Vincent Hilomen, executive director for Priority Programs, Department of Environment and Natural Resources.

Already, Philippine coral reefs are degraded, the seed source for seaweeds is declining, seagrass beds are heavily stressed and mangroves are degraded, he said during the Regional Scientific Conference hosted by the National Academy of Science and Technology.

Hilomen said local marine invertebrate resources like shells and mollusks are in a declining state, as are demersal or bottom dwelling fish, small pelagic fish in the mid-layer of the sea, sharks and rays. Only tuna, except for bigeye tuna, is in a stable condition, he said.

“Because temperature affects biological clocks of many marine organisms, global warming confuses their biological cycles,” Hilomen said, adding this can compromise reproduction.

“More scary is the fact that increased temperatures can push fish away from the tropics to higher latitudes and deeper waters,” he said, pointing out that when fish migrate to higher latitudes to escape warm waters, food security in a tropical country like the Philippines “will be compromised.”

The result is that the maximum catch potential of about 1,000 exploited marine fish and invertebrate species worldwide will be re distributed to other areas, he said.

Global warming melts polar ice caps, leading to sea level rise. Sea level rise, together with groundwater pumping, may enhance salt water intrusion that “may eventually lead to lowland agriculture failure,” Hilomen said.

“Agricultural failure may also lead to the movement of farmers to coastal areas, creating additional pressure on coastal fisheries,” he added.

There will be change in species composition as sea level rise may favor faster growing species in new areas, he said. Mangroves that are spawning, feeding and nursery grounds of many food fish, for example, will be affected.

“One of the worst perennial threats is coastal sedimentation which can make the water turbid, making it difficult for seagrass to grow. Worse still, it can bury and suffocate coral reefs,” Hilomen said.

To prevent or mitigate the loss of fish habitat, spawning, nursery and feeding grounds of fish need to be identified and protected, he said. Studies have shown that areas with mangrove, seagrass and coral reefs perform better as refuge and should be given priority.

To ease the impact of fish migration, species more tolerant to temperature variability must be identified and studied for possible sea ranching. Aquaculture must select sites and observe proper stocking density, feeding volume and frequency.

Saline-tolerant fish species and the spatial distribution and migration patterns of fish must be researched. Early warning systems of marine biodiversity and habitat must be developed. Post harvest technologies and food safety must be developed. Vulnerability assessments of coastal areas must be conducted.

Fish reproductive schedules must be determined so that partial closures of fisheries in some areas are put in place. The sequence of which species to harvest over a season must also be identified.

To help mitigate the flooding of low lying areas due to sea level rise, Hilomen said areas vulnerable to flooding must be mapped. Evacuation and relocation plans must be formulated. Flood prevention structures such as drains and pumping stations must be constructed.