**پیام دکتر راجر پولین کارشناس برجسته آبزی پروری و محیط زیست به همایش ایران کیج کالجر 2018:**

**SOME THOUGHTS ON CAGE AQUACULTURE**

For any development of cage aquaculture, the whole production chain, from seed to market, must be considered, together with the economic and environmental aspects of every step along the chain. All aquaculture production chains begin with ‘seed’ of the farmed species (as fertilized eggs or embryos, larvae, fry, fingerlings). Seed are collected from wild populations or from captive brood-stock and are raised in hatcheries and nurseries. Cages are not used much in seed production.

Aquaculture production chains continue with ‘growout’to market size. Cages are used widely for growout, in freshwater, brackishwater and marine aquaculture. A huge diversity of cage materials and designs is used for growout, appropriate to the farmed species, the surrounding aquatic ecosystems, and the prevailing economic circumstances. Cage materials and cage designs are evolving rapidly through research to improve durability, productivity and profitability. It is important to choose well-proven and cost-effective cage materials and designs for all commercial operations.

Some fish always escape from cages. Cage culture should not therefore be undertaken where such escapes would threaten wild biodiversity or change the surrounding and contiguous ecosystems. Caged fish affected by diseases and parasites can threaten the health and survival of wild fish. Cage culture should not be undertaken where this would pose unacceptable risks to wild biodiversity.

Where cage aquaculture is environmentally acceptable, its planning and management must ensure all development is kept within the ecological carrying capacity of surrounding ecosystems. Operating too many cages, with too many fish and consequently too much pollution of the supportive ecosystem by nutrients, fish wastes and chemicals, has often led to economic and ecological disasters.

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