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Theme: Special Sessions

Session: ThG3 - Capacity

Title: **Revenue Enhancing Technology and Excess Capacity: A case
            study of the Great Barrier Reef reef-line fishery**

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Abstract: Overcapacity in the form of excess fishing vessels or effort allocation
            often arises out of improved economic conditions and/or innovation in
            fishing methods and is generally associated with species
            overexploitation. With many fisheries fully or over-exploited,
            stakeholders are advocating product enhancement to add value to the
            fishery. A recent innovation in handling and husbandry techniques in
            the coral reef finfish fishery (CRFF) on the Great Barrier Reef has
            seen considerable value added to the main target species' whereby
            these species are sold alive as opposed to frozen. For operations
            adopting this technology, vessel profitability has been considerably
            enhanced. While bringing about improved economic conditions in the
            short-run, the emergence of the trade in live reef fish has coincided
            with an increase in fishing effort and catch, much of which has been
            attributed to mobilisation of latent effort, which threatens the
            biological and economic sustainability goals of the fishery.

            The limited entry CRFF is used to explore the issue of reducing excess
            capacity where latent effort exists. Data collected from surveys has
            been used to develop a virtual fleet with heterogenous capital stocks
            and input utilisation. Data Envelopment Analysis (DEA) is used to
            estimate capacity where i) outputs are unregulated and latent effort
            prevails (input-oriented) and ii) under a TAC constraint where latency
            in the fleet has been partially addressed (output -oriented). This
            study differs from other previous studies in that it uses cost and
            revenue data as opposed to physical inputs and outputs and is
            applied to a low-technology capital non-intensive fishery. Moreover,
            fishing effort is heavily weather dependent. The effectiveness of effort
            and catch reduction goals will be discussed in the context of fleet
            heterogeneity and whether removal of latent licences has improved
            capacity utilisation.