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## SUSTAINABLE INTENSIFICATION OF AQUACULTURE VALUE CHAINS BETWEEN ASIA AND EUROPE: A FRAMEWORK FOR UNDERSTANDING IMPACTS AND CHALLENGES

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### Abstract

Sustainable intensification (SI) is defined and interpreted in terms of a framework to support production of farmed aquatic animals in Asia and their trade with Europe. A novel holistic perspective to value chain analysis, informed by a range of sustainability tools, is used to explain the dynamic in the trade that is having significant impacts on livelihoods in both regions. The origins of SI in agriculture are first described and their congruence with aquaculture clarified. Asian aquaculture systems, based on their emergent properties, are then located within a SI framework considering possible boundaries (enterprise, zone or whole value chain). The implications of conventional intensification, and alternatives are explored with reference to specific examples and impacts on the local and global environment, human and aquatic animal health and welfare. The challenges to sustainability of such value chains and implications for their governance, food culture and consumer habits are considered. Local consumption of seafood in Asia is found to be a major driver of growth and alternative markets for exports regionally and in Low and Medium income countries (LMIC) are likely to impact on employment and power in the value chain between Europe and Asia. The benefits of viewing farmed seafood as part of broader food landscapes are identified in the analysis, as is a shift in the focus from volume to value in terms of goal setting. More holistic perspectives of sustainability also emerge as necessary to describe and interpret global value chains rather than limited reductionist, production-orientated views. A diversity of trends in the development of farmed seafood is identified in contrast to any simplistic move to intensification, likely informed by economic, environmental and social factors in producer and consumer countries.

### Statement of relevance

Global imbalances in production and consumption of farmed seafood are stimulating trade between Asia and Europe. The dynamic of global value chains around this emergent trade and their

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