SUMMARY:

THE ECOLOGICAL EMBEDDEDNESS OF GLOBAL PRODUCTION NETWORKS: SALMON AQUACULTURE AND PALM OIL

The concepts of 'global value chain' (Gereffi, Humphrey, & Sturgeon, 2005; Gereffi, 1994) and 'global production networks' (Henderson, Dicken, Hess, Coe, & Yeung, 2002) have repeatedly been utilized to analyze the increasingly disperse and complex structure of global production of goods and services, e.g. clothing, food, electronics and cars. While the concept of global value chain (GVC) mainly captures the way global buyers and suppliers coordinate themselves to turn various inputs into consumer products, and how value is generated and captured in the process, the notion of global production network (GPN) further theorizes the social, institutional and geographical embeddedness of global economic organization around particular products, and the networks of players involved in it (Gereffi et al., 2005; Henderson et al., 2002; Levy, 2008). The popularity of these concepts as analytical tools is further reflected by a recent 'update' – styled as GPN 2.0 – which takes a more dynamic and strategic perspective that includes the evaluation and management of environmental risks (Yeung & Coe, 2015).

This paper specifically focuses on the idea of ecological embeddedness to provide a reasonable entry that begins to investigate the role of the environment in global production. The notion of ecological embeddedness brings research on ecosystem goods and services, which serve as material inputs to our production processes, into the concept of the GPN. A simple example of an ecosystem service is the lumber that flows from a healthy forest, and which supports a variety of industries e.g. construction, furniture manufacturing, paper production, etc. Ecosystem goods and services have been calculated to have significant value in relation to global GDP output, with some estimates suggesting that ecosystem services produce twice as much value annually as the entire human enterprise (Costanza et al., 2014). Incorporating a more material understanding of the role played by healthy ecosystems could have an immense impact on participation in global production i.e. how, where, and by whom value is generated, as well as how economic processes are coordinated and governed.

Though this paper is primarily conceptual, several empirical examples are used to provide the reader with an opportunity to see how ecological embeddedness is framed and operationalized. Specifically, I investigate Atlantic salmon and palm oil production networks to illustrate key dimensions of ecological embeddedness and discuss their implications for areas of interest in the GVC and GPN literature: participation, capability and power distribution between actors; geographic configuration and institutional context; and inter-firm governance mechanisms. I propose that ecological embeddedness affects the bargaining power of buyers vs. suppliers, market development of suppliers, and risk management of buyers, all of which affect governance relations. In a nutshell, I argue that ecological embeddedness influences almost all major dimensions of current GVC and GPN analysis.

My study has important implications for future research and policy-making. First, I link GPNs to complementary concepts which have received extensive treatment in ecological economics, and thus attempt to enhance the analytical scope of both debates. Second, I strengthen the rather neglected input/upstream side in GPN and GVC analysis. Whereas most

research has focused on governance strategies between major global buyers (of intermediate goods) and suppliers, I add a more elaborate understanding of the role played by primary producers and 'raw materials' using a more ecologically grounded analysis. Third, I inform policy-making by linking questions of capability development and upgrading within GPNs to ecological sustainability of resource bases and production systems. There are five central propositions which emerge from this research, and several important normative implications which I discuss at the end of the paper. Additionally, I provide an initial framework for assessing ecological embeddedness in other production networks to support further research in this area.

My hope is that participating in the Ivey/ARCS Sustainability Academy will assist me in polishing this paper, adding appropriate empirical support, and publishing in a top journal. I have already submitted versions of this paper to numerous academic conferences; in 2015 it has been presented at the Academy of International Business, won the Best Student Paper award from the International Business Division of the Administrative Sciences Association of Canada, and received the Organizations and Natural Environment – Kedge award for Most Unorthodox Paper from the Academy of Management. Though the reception to my work has been very positive, I have not yet received the direct critical feedback I need to move this paper from conference acceptance to publication. The Ivey/ARCS program appears to be the ideal opportunity to take my work to the next level and reach a broad audience interested in sustainability, environmental responsibility, and global economic governance.

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