Thesis work – Logistics study for Husmuttern factory-in-a-box solution for post-war recovery (e.g. Syria, Yemen, Ukraine) (thesis work can be done in English or Swedish depending on University demand)

**Background**

For areas in the world that have suffered from war, natural disasters or crisis, there is often a need to get production and construction going in order to build up the civil society. There is need for buildings, healthcare materials and equipment etc. The production and construction capabilities can be limited by local supplies of raw materials and tools as well as by production skills of the local work force.

Husmuttern (husmuttern.se) has built up a concept for building standardized house modules with a production set-up that is not dependent on language and that can have a productive use also by non-experienced personnel. The current supply chain set-up for the house module production is based on a Swedish context. Now they wish to elaborate if the system could be set-up in a foreign context with new local supply chain and different working culture.

The production and supply chain activities contribute to sustainable development with both positive and negative impact, the aim is to maximize positive impact on society while minimizing e.g. negative environmental impact from waste and emissions. However, recent shortages of material have put a pressure on companies to find alternative circular solutions. To address this a sustainability-driven management approach can be implemented. Life cycle management (LCM) is a concept for integrating environmental work into the organizational processes by integrating environmental thinking in every step in the life-cycle.

**Goals of the Master’s Thesis**

The aim of this master and/or bachelor thesis is to conduct a supply chain analysis and re-design of the factory-in-a-box solution for a foreign location. There may be more than one thesis groups working in different scenarios (e.g. conceptualizing for different countries). Depending on local market context and material availability different re-designs of the product, changes of materials and components, and provide suggestions on how the company can leverage this analysis in its supply chain and with its clients. The students will work independently but with close contact to Husmuttern and RISE.

The students are expected to:

- investigate the availability of raw materials and components in the selected country
- investigate the needs of products and their design for the intended market.
- identify challenges and opportunities
- Assess sustainability of the supply chain
- Suggest different strategic development paths for the conceptual offering.

**Expected outcomes**

The master’s thesis is expected to generate an understanding of how a logistics and supply chain analysis is carried out taking the local market into account and how this can be leveraged by companies in the supply chain. The gained understanding will be incorporated also in the RESPIRE project to support a move towards a resilient industrial system.
**Requirements and the application process**

- It is preferred that students write the master’s thesis in pair
- Geographical location: Eskilstuna, RISE office in Mölndal and/or Chalmers TMEor KTH Södertälje
- Applications must be sent latest on November 15th, 2022

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