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# Last Mile Transportation

Dr. Thomas E. Fernandez

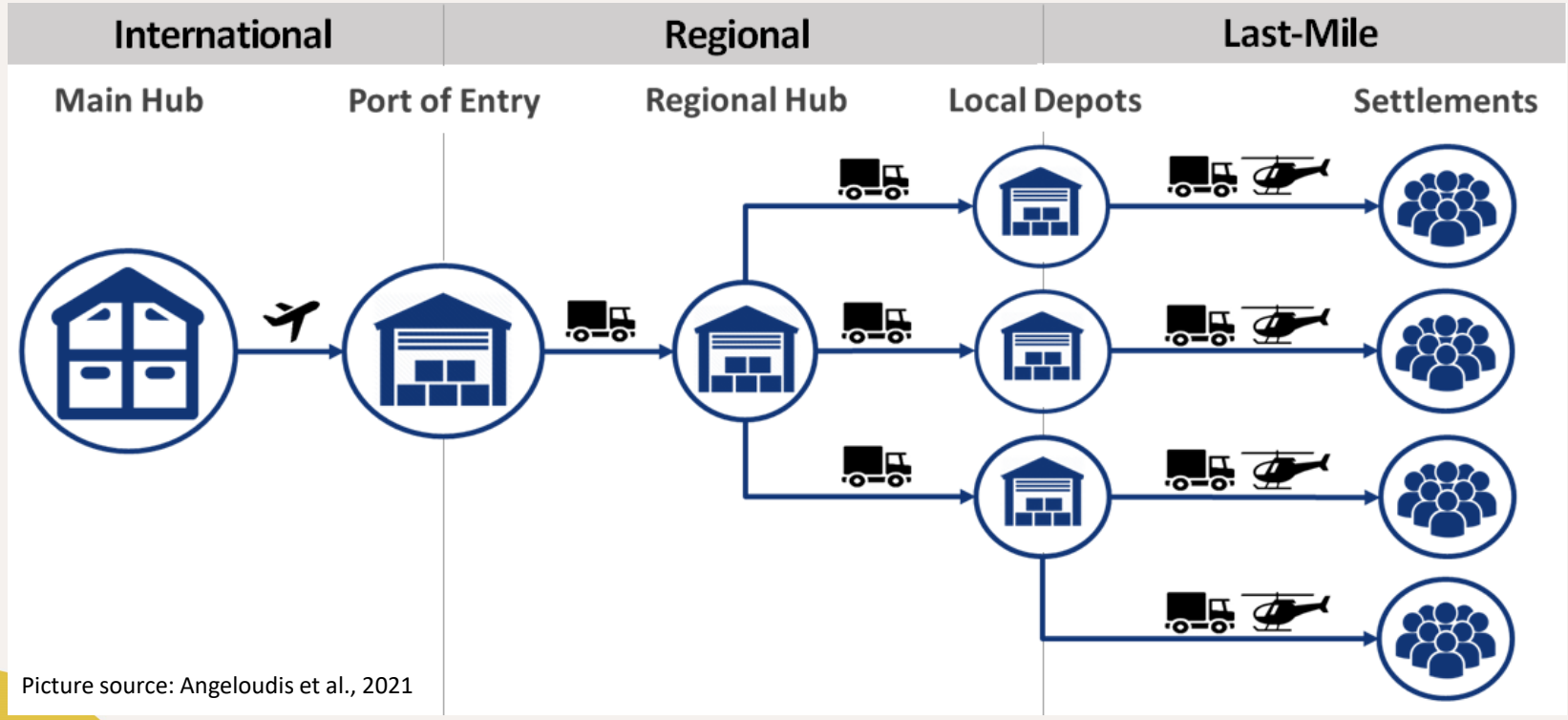
Humanitarian Logistics Association (HLA) and

University of the Thai Chamber of Commerce (UTCC),

International School of Management (iSM)

# Last Mile Transportation

- Transportation from the local warehouse or distribution center to the beneficiaries.




Picture source: Angeloudis et al., 2021

# Emergency Response: Traditional Issues

- Roads, bridges and other ways may be damaged or destroyed.
- Demand for transportation may be uncertain.
- Demand of transport capacity may exceed supply.
- Delivery to hubs, such as a larger village in a village cluster: Crowds may build up around the vehicle
- One family member or a few representatives of a nearby smaller village will receive goods on behalf of the others.

# Emergency Response: Initial Covid Response

- New high demand for hand sanitizers, masks and other PPE
- Items not prepositioned and low production capabilities

  => Initial severe shortage of these supplies
- Social distancing required during last mile operations
- Shortage of drivers in addition to shortage of vehicles
- Drone delivery avoids human contact
- Cool/cold storage required at vaccine distribution points

# Development Phase: Traditional Last Mile

- Demand is known.
- Distribution centers and vehicles can be planned.
- No difference to commercial logistics.

# Development Phase: New Normal

- New products: PPE, vaccines. Rethinking of waste management required
- Distribution centers and vehicles need to be approved by the country's FDA
- For vaccines, all beneficiaries must travel to vaccination centres in person
- High demand for cool/cold chain distribution

# Development Phase: New Normal

- Demand: Uncertain. Forecasts are based on demographics, but beneficiaries may not want to get vaccinated, others only want specific brands, others cannot wait.
- Supply: Uncertain. Due to uncertain demand, vaccines will be donated before expiry. On the other hand, production earmarked for export may be used in the production country.

# Summary

- There is a shift towards new products requiring FDA-approved cool chains.
- Demand management techniques must be applied, and supply is uncertain.
- Social distancing has to be practiced in labour-intensive operations such as warehousing or distribution.
- Vaccine centres have to be set up, beneficiaries have to travel in person.
- Waste products now include biohazardous material on a large scale.
- Assumption: Vaccines and PPE will remain major items for development aid.
- How about sustainability?

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Dr. Thomas E. Fernandez
Thomas.Fernandez@humanitarianlogistics.com
Thomas.UTCC@gmx.net