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Deployment of a bio-economic 'hub' in rural Thailand by means of a centralized biogas plant

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This paper seeks to investigate the opportunities for implementing a centralized biogas plant in Thailand, as a supplement to the existing Farm biogas plant concepts. This will be researched by identifying a subsector within the agriculture, where such type of plants would be valuable to deploy. Case studies of a local community; Tambon Ban Kor, in North East Thailand thus reveals that dairy cattle farmers, who deliver milk to a dairy company, could benefit extensively from such facility. The study indicates that current challenges regarding GHG emissions, manure handling practices, like spill of nitrogen, low milk yield and inappropriate cattle diets etc., can be improved in the cattle farms, by better housekeeping, as well as supply of manure to the local dairy. Here, fossil fuels use could be substituted by renewable energy from biogas, and the energy used at various temperature levels by cascading. The paper further reveals that large amount of appropriate and available feedstock for the suggested biogas plants are assessable within the community, and currently pose an environmental problem, or re-used inefficiently. The centralized biogas plant will thus provide a development 'hub' for bio-economic solutions to evolve, and constitute to a platform for new income and product outputs opportunities, as renewable energy production as well as various environmental benefits within rural Thailand.

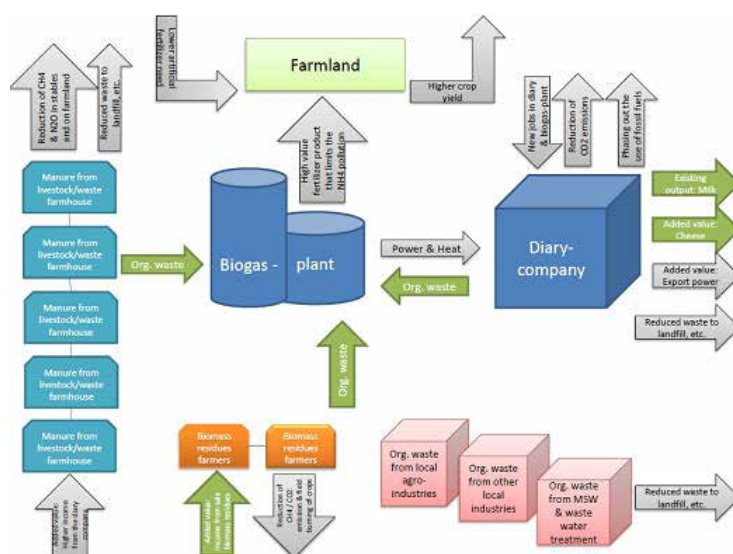


Figure 1: Conceptual framework for identifying new bio-economic opportunities in Thailand, through the implementation of a Centralized biogas plant (development 'hub'), with focus on screening relevant biomass feedstock within rural communities engaged in the dairy sector.

Biography

Rikke Lybæk has expertise in renewable energy planning and resource management in the transition from the use of fossil fuels to renewable energy sources. She specializes within the field of biomass utilization for the production of renewable energy, and work with concepts like bio-economy, industrial ecology and eco-efficiency. She has worked with e.g. biogas and thermal gasification technologies in many countries in Asia over the last 15 years, like Thailand, Malaysia, India and Japan, as well as within the EU. Her research focus is to establish decentralized energy systems in local communities based on indigenous biomass resources, and to apply a bottom up - a participatory approach - to the deployment of renewable energy technologies locally.

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