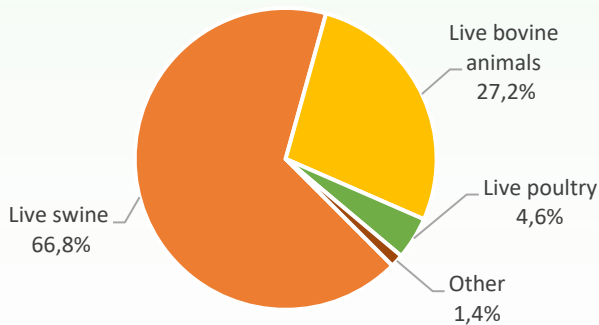


ENVIRONMENTAL IMPACT ASSESSMENTS OF PORK PRODUCTION

BACKGROUND:

THE EFFECTS OF CLIMATE CHANGE AND OTHER ENVIRONMENTAL IMPACTS ARE BECOMING MORE APPARENT AND ARE GAINING ATTENTION AS TIME PASSES. ALTHOUGH FOOD PRODUCTION IS A KEY INDUSTRY, THE IPCC ESTIMATES 21–37% OF GHG EMISSIONS CAN BE ATTRIBUTED TO FOOD PRODUCTION¹. GOVERNING BODIES OF BOTH THE EU AND DENMARK HAVE SET AMBITIOUS GOALS FOR REDUCTION, WITH THE EU AIMING TO REDUCE 2030 EMISSIONS BY 55% COMPARED TO 1990². PORK IS THE MOST COMMON MEAT PRODUCED IN BOTH DENMARK AND EUROPE³. AS THE INDUSTRY IS BECOMING MORE PRESSURED TO MAKE IMPROVEMENTS FOR EMISSIONS, SEGES WHICH IS THE R&D SECTION FOR THE DANISH FARMING INDUSTRY (LANDBRUG & FØDEVARER F.M.B.A), HAS COLLABORATED WITH SDU TO MAKE IMPROVEMENTS TO THEIR PORK PRODUCTION FROM AN ENVIRONMENTAL PERSPECTIVE.

LIVE ANIMALS IN DENMARK (2016)³



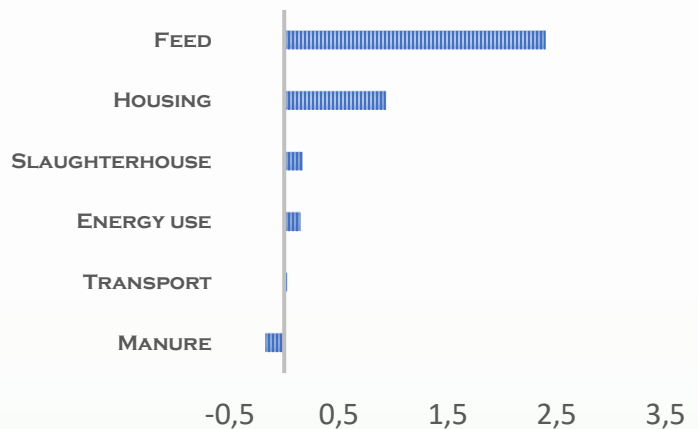
OBJECTIVES:

CURRENTLY UNCERTAINTIES ARE PRESENT FROM METHODOLOGICAL CHOICES, VARIATION OF PRODUCTION SYSTEMS, AND EXTERNAL INPUTS SUCH AS FEED VARIATION. IMPROVING THE CURRENT INVENTORY MODEL AND CONNECTING EXISTING DATABASES AND MODELS, WILL ALLOW FOR A HIGHER DEGREE OF ASSESSMENTS TO BE MADE. ADDITIONALLY, METHODS WILL BE DEVELOPED FOR PORK PRODUCTION AND CONNECTED PROCESSES IN TERMS OF LCA, AND FOR DEALING WITH UNCERTAINTIES AND LACK OF SIGNIFICANCE.

PROBLEM STATEMENT:

CURRENTLY, MINIMAL LCA KNOWLEDGE IS PRESENT WITHIN SEGES ALTHOUGH A RECENT LCA SECTION HAS BEEN FOUNDED. ADDITIONALLY, TOOLS ARE IN DEVELOPMENT FOR PROVIDING ENVIRONMENTAL ASSESSMENTS TO FARMERS WHICH REQUIRE LCA KNOWLEDGE AND FURTHER DEVELOPMENT. THESE TOOLS (IF PROPERLY DEVELOPED) HAVE POTENTIAL OF PROVIDING ACCURATE IMPACT ASSESSMENTS ON A PER FARM BASIS, WHICH WILL ALLOW DATABASES OF IMPACTS TO BE CREATED FOR THE INDUSTRY. VARIOUS UNCERTAINTIES ARE PRESENT WITHIN PORK PRODUCTION WHICH RELATE TO FEED TYPE AND ORIGIN, ENVIRONMENTAL TECHNOLOGY OF PIG HOUSING, MANURE HANDLING AND OTHER VARIATION. THESE VARIATIONS RESULT IN A REQUIREMENT FOR IMPROVED METHODS TO PROVIDE MORE ACCURATE ASSESSMENTS ON A FARM LEVEL. NO PEFCR FOR PORK IS IMPLEMENTED AT THIS TIME AS IT HAS BEEN DISCONTINUED FOR THE UNKNOWN FUTURE, WHICH RESULTS IN DIFFICULTY OF COMPARISON DUE TO METHODOLOGICAL CHOICES⁴. THIS PRESENTS AN ISSUE ON WHICH METHODOLOGY TO USE WHICH CAN BE AGREED UPON. SEGES WANTS TO IMPROVE, AUTOMATE AND UPSCALE THEIR ASSESSMENTS THROUGH THE PREVIOUSLY MENTIONED TOOLS, WHICH WILL REQUIRE EXPERT KNOWLEDGE FOR SELECTING AND DEVELOPING APPROPRIATE MODELS. MOST IMPACTS CAN BE TRACKED BACK TO THE FEED AND HOUSING OF THE PIGS, WHICH WILL BE THE PRIMARY FOCUS OF THE PROJECT.

KG. CO2EQ PER KILO OF MEAT⁵



HOW WILL IT BE ACHIEVED?

IMPROVED MODELING

IMPROVEMENTS AND ROBUST MODELS ARE REQUIRED FOR ACCURATE ASSESSMENTS AND TRACKING OF IMPACTS ACROSS VARYING FARMS.

PEFCR AND CIRCULAR ECONOMY

FUTURE INDUSTRY MUST BE PREPARED FOR IMPLEMENTATION OF PEFCRS IN THE PORK INDUSTRY. PREPARING THE INDUSTRY FOR FUTURE PEFCRS AND APPLYING CIRCULAR ECONOMY PRINCIPLES WILL BE NECESSARY FOR REQUIRED FUTURE CHANGES.

TOOLS CREATION AND IMPLEMENTATION

TOOLS ARE CURRENTLY IN DEVELOPMENT SUCH AS "PORK 4.0" AND "CLIMATE TOOL" WHICH IS INTENDED TO PROVIDE PEF DATA FOR THE FARMER AND NATIONAL DATABASES FOR EMISSIONS OF PORK PRODUCTION. THE TOOL REQUIRES IMPROVED MODELING AND VARIOUS IMPROVEMENTS, WHICH IS ONE OF THE TASKS.

NEW METHODS

DEVELOPMENT OF IMPROVED METHODS FOR CONDUCTING PORK LCAs AND DEVELOPMENT OF METHODS FOR ASSISTING DECISION MAKERS WHEN STATISTICAL SIGNIFICANCE IS LACKING.

1. <https://www.ipcc.ch/srccl/chapter/chapter-5/>

2. https://ec.europa.eu/clima/policies/strategies/2030_en

3. https://ec.europa.eu/eurostat/databrowser/view/AGR_R_ANIMAL/DEFAULT?TABLE?LANG=EN

4. https://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm

5. <https://agricultureandfood.dk/-/media/AgricultureandFood/Danish-Agriculture-and-Food/Danish-Pig-Producer-Environment-ashx.pdf>