Proposal of CIGR Working Group

Working group title: Logistics

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Introduction

Logistic definition: "Logistic is a discipline that plans, implements and controls the efficient and effective flow and storage of good, services and related information from the point of origin to point of consumption in order to meet customer's requirements". (Ricks et al., Council of Logistic Management, 2002).

Logistic plays an important role in today agriculture, facing new challengies (GMO crops, Globalisation, Traceability, Local produce distribution, High capacity harvesting equipments, Increase in food quality concerns, Environmental impact, etc.) and new opportunities (biomass and bioenergy supply-chains, GPS technologies on tractors and trucks, e-commerce, new methods from operation research and industry, information technology, etc.).

Some logistic techniques are available from industry domain, however there is a need for adaptation (handling and storage of perishable produce, seasonal production and demand, timeliness constraints, food safety constraints on transportation) and some methodologies should be implemented ex-novo. Still few researchers within CIGR work on this topic and there is a need to share information on methodologies and applications.

Objectives

- To meet recent demands on machinery management in complex agricultural operations related to harvest, distribution and transport of produce (grain, biomass, slurry)
- To share the state-of-the art technology for the optimal management of on-farm, extra-farm and regional logistic operations
- To develop methods and tools to improve the efficiency of the logistic operations
- To set-up standard parameter for comparison of logistic operations
- To optimize, with a system approach, the performance of the working chains, under many viewpoints, considering tecnical, economic and environmental aspects.

Methods and techniques

The WG will discuss and promote the following methods and techniques (and will not be limited to):

- Set-up of field trials with standard conditions
- Intermodal operation (e.g. wagon-truck, truck-barge, etc)
- Innovative handling systems and technologies
- Storage management and agricultural facility planning
- Euristic and scheduling tools
- Discrete event simulation modeling
- Linear, mixed, integer programming
- Analytical models, statistical tools
- Vehicle route planning and logistic networks
- Management resource planning and JIT methodologies
- Lean Thinking applied to streaming of information and goods

Domains

- In-farm, extra farm and regional logistics
  - Service operation logistics
  - Biomass & forage supply-chain
  - Grain supply-chain
  - Slurry management
  - Storage and operation design
- Delivery of high-value produce through the supply-chain
  - Local produce
  - Information sharing
- Information streaming along the supply-chain
  - Traceability performance for the supply chain

Expected outcomes

- To organize within CIGR specific workshops on the topic
- To interact with other CIGR Working Groups and Sections
- To provide reports on state-of-the-art of the topics
- To develop a network among the people working on logistic topics within CIGR
- Cooperate with E-Journal with papers on the topic and with a pool of expert reviewers for the subject
- To promote the activity among industry researchers and agriculture extension services specialists
- To develop contacts with similar international organizations