



CIGR V ACTIVITIES



Remigio Berruto, Ph.D. - CIGR V President

CIGR (INTERNATIONAL ASSOCIATION OF AGRICULTURAL ENGINEERS)

- ✕ Section I – Land and Water
- ✕ Section II – Structures and Environment
- ✕ Section III – Plant Production
- ✕ Section IV – Energy in Agriculture
- ✕ Section V – System Management
- ✕ Section IV – Bioprocesses
- ✕ Section VII- Information Technology



CIGR V BOARD

- ✖ President: Remigio Berruto (IT)
- ✖ Vice President: Dionysis Bochtis (GR)
- ✖ Secretary: Elisabeth Quender (AT)
- ✖ Bartosik (AR), LUOMA (FI), BERNHARDT (DE), SCHICK (CH), Takigawa (JP), Romanelli (BR), Changying (CN), Borja Velasquez (SP), Mihina (SK)
- ✖ Honorary chairs: Juliszewski (PL), Piccarolo (IT), Sorensen (DK)



MISSION STATEMENT

The mission of Section V is to optimize farm management and work organization by use of operations planning, logistics and system engineering, while improving the operations efficiency, economics, health, and workers' safety



SCOPE AND R&D ACTIVITIES

- ✗ **System Management:** Related to the information technology and decision support systems used to improve productivity and product quality as well as cost reduction, including the reduction of the impact of agricultural production on the environment
- ✗ **Work organization:** Related to the investigation of work methods and labour operation time with combines, tractors and other equipment, including the effect of weather conditions on daily planning
- ✗ **Ergonomics:** Related to the workload and safety of farmers' use of combines, tractors and other technical equipment, including the compatibility of signs and manuals in the actual workplace
- ✗ **Risk analysis:** Related to accident prevention in all agricultural operations that impose varying levels of physical and mental stress
- ✗ **Section V works in collaboration** with the 'Commission Internationale de l'Organisation Scientifique du Travail en Agriculture' (CIOSTA) with a focus on agricultural production systems, yield and quality automation, labour economics and ergonomics and safety



DELIVERABLES

Commission Internationale de l'Organisation
Scientifique du Travail en Agriculture

- ✗ Co-organizing of **CIESTA** Conferences every two years
- ✗ Organization of focused events(e.g. CIGR V Symposium - Technology and Management to Increase the Efficiency in Sustainable Agricultural Systems, Rosario, Argentina, 3-6 september 2009) – under Prof. Piccarolo Chairmanship
- ✗ Sponsorship of events and conferences (e.g. Ragusa SHWA, 2008 and 2012, 2015)
- ✗ Set-up within CIGR of a common database of proceedings for sponsored events (e.g. the papers of this conference will also be loaded there)
- ✗ Send qualified papers to the CIGR E-journal
- ✗ Establish of CIGR Logistic WG



FUTURE CHALLENGES

✗ Advanced operation management

- ✗ *service robots in bio-production systems*
- ✗ *telematics, distributed machinery systems and remote diagnostics*
- ✗ *logistic systems and Supply Chain Management (SCM)*
- ✗ *farm management information systems (FMIS)*
- ✗ *use of cloud computing and internet services*

✗ Ergonomics and workers safety

- ✗ *Worker's safety and fatigue included in the optimization process*
- ✗ *Operation management carried out in a way that reduce risks for operators*



USE OF WEB TOOLS & CLOUD COMPUTING

- ✗ *free availability of standard data and methods for non-expert users*
- ✗ *standardization of the results obtained among different users*
- ✗ *comparison of studies carried in different condition and location*
- ✗ *no need for installation and distribution costs*
- ✗ *availability of multiple scenarios from a multitude of users on the web*
- ✗ *accessibility of **data** and scenarios from many devices (mobile, pc, etc.)*
- ✗ *possibility to compare farms and crops scenarios within different countries and the world*



CIGR WG LOGISTICS

Established 2012

LOGISTIC WG PEOPLE

- ✗ **Chair:** Prof. Remigio Berruto (IT)
- ✗ **Vice Chair:** Dr. Patrizia Busato (IT)
- ✗ **Secretary:** Dr. Elisabeth Quendler (AT)
- ✗ **Members:** Costa, Gay, Menesatti, Pari (IT), Banhanzi, Saunders (AU), Bernhardt (DE), Froba (DE), Opara (ZA), Romanelli (BR), Schiefer (DE), Bochtis (GR), Sorensen (DK), Buckmaster, Ess, Li, Maier, Montross, Rodriguez, Searcy, Vogt, Vosgioukas (USA), Handler (AT), Savoie, Sokhansanj (CA), Velasquez (ES), Bartosik (AR), Zokaei (UK), Annevelink (NL), Boulakis (UK), Schick (CH)



DEFINITION OF LOGISTIC

- ✘ “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).



PURPOSE

- ✗ new challenges (GMO crops, Globalization, Traceability, Local produce distribution, High capacity harvesting equipments)
- ✗ new opportunities (biomass and bioenergy supply-chains, GPS technologies on tractors and trucks, e-commerce, robotics....)
- ✗ needs of adaptation of industrial methods: handling and storage of perishable produce, seasonal production and demand, timeliness constraints, food safety constraints on transportation



OBJECTIVES

- ✗ To meet recent demands on machinery management in complex agricultural operations related to harvest
- ✗ 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 value chains logistic operations, considering technical, economic and sustainability aspects.



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
- ✗ 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 – (co-sponsorship of II logistic conference in greece, Sep. 2012)



DOMAINS

- ✖ In-farm, extra farm and regional/global logistics
 - + Service operation logistics
 - + Biomass & forage supply-chain
 - + Grain supply-chain
 - + Slurry management
 - + Storage and operation design
 - + Logistics sustainability
- ✖ Delivery of high-value produce through the value-chain
 - + Global/local supply of agro-food produce
 - + Information sharing along the chain
 - + Demand forecast and storage management
- ✖ Information streaming along the supply-chain
 - + Traceability performance for the supply chain



YOU ARE WELCOME...

- + To suggest ideas and topics for discussion in future meetings
- + to point out research need and new domains
- + To send good quality papers at CIGR E-Journal (fast review process)
- + To interact and participate in the network of CIGR V people, conferences..

