Fenland biomass for a climate-friendly future - Development of value chains

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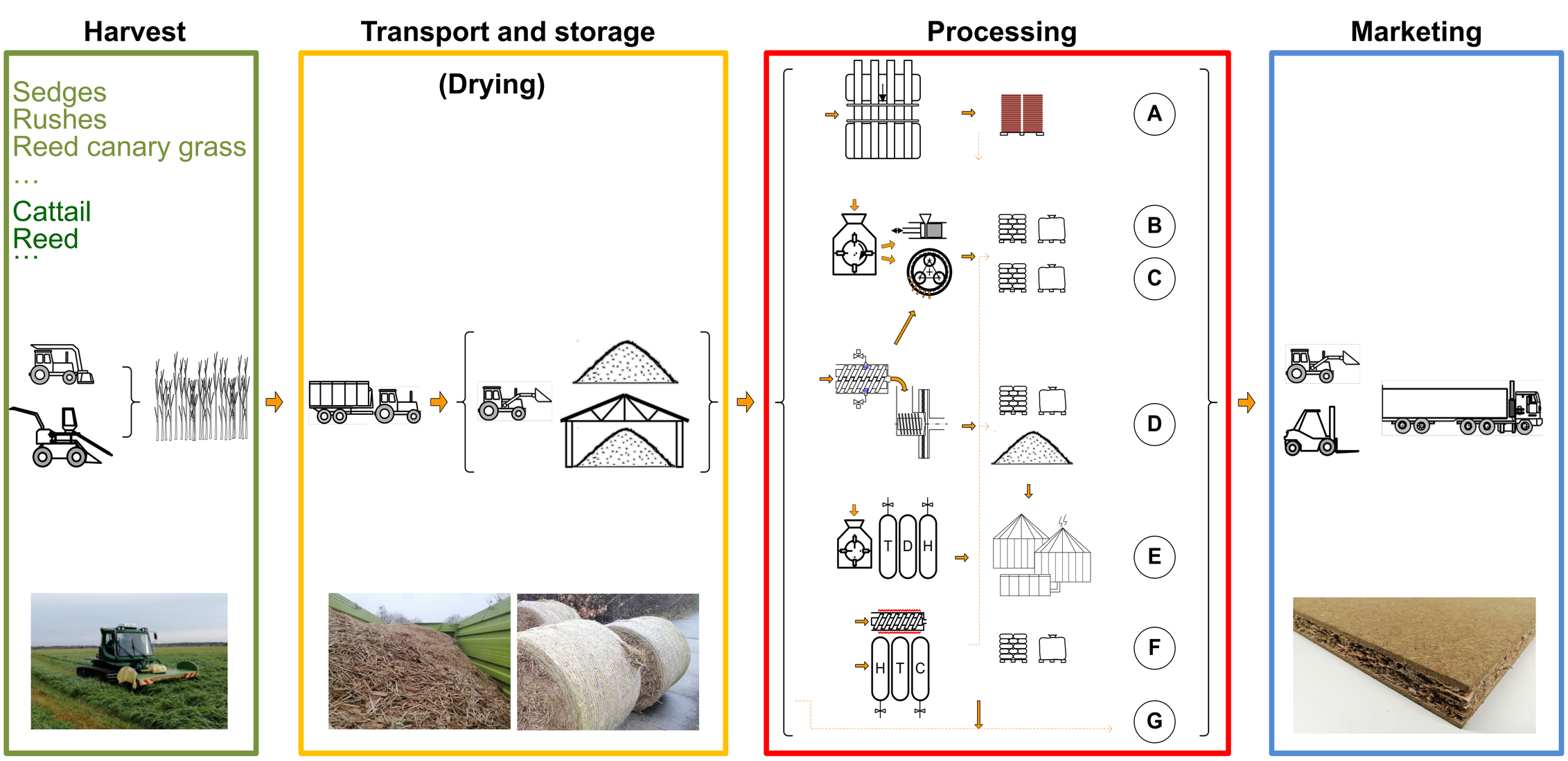
The federal state of Brandenburg in northeast Germany is covered by approx. 263,000 ha of organic soils (fenland and bogs). Nearly all of these areas have been drained for intensive cropland or grassland use, resulting in degradation of organic matter and a release of large amounts of greenhouse gases. Only approx. 3,000 ha are still semi-natural. Rewetting requires the development of site-adapted systems and innovative exploitation chains for fenland biomass.

Development of process engineering and value chains for fenland biomass

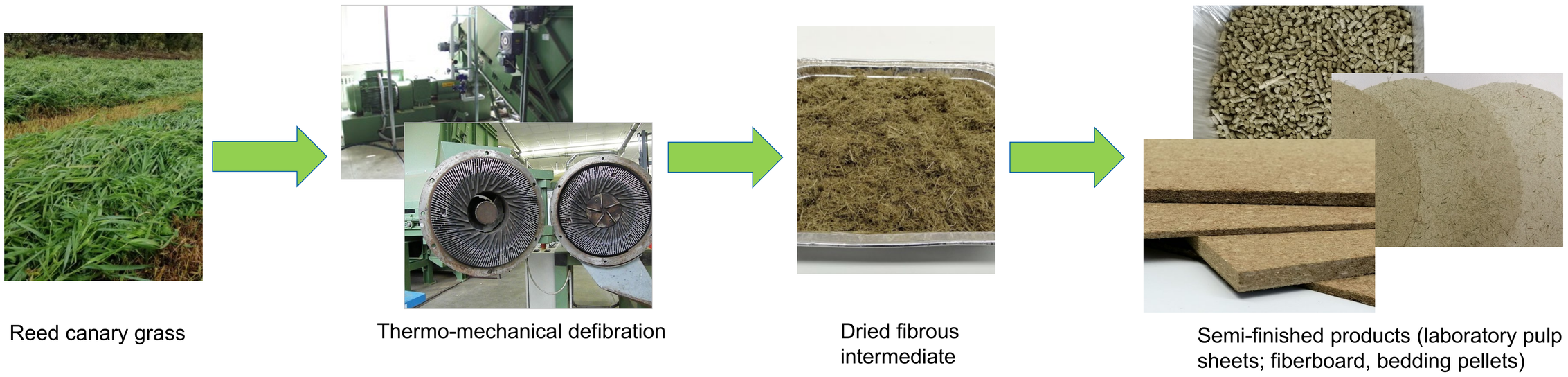


A Fiber for board materials, cardboard, pulp molding, insulation materials
B Pellets and briquettes as fuel
C Pellets as bedding e.g. for organic farming (poultry farming)
D Fibers for peat substitutes e.g. for organic farming

E Residues, thermobarical hydrolysis products for biogas & lactic acid production
F Biochar from pyrolysis, HTC & gasification technology
G Co-combustion in biomass cogeneration plant

The requirements for the production and use of potential end products from paludi-biomass are the determining factors for the design of the upstream supply chain. For example, the type of biomass imposes fundamental needs for site-specific selection of harvesting technology, subsequent transportation, storage, and drying of agricultural feedstocks.

Processing of paludi-biomass into intermediates and intermediate products (semi-finished products)



Reed canary grass

Thermo-mechanical defibration

Dried fibrous intermediate

Semi-finished products (laboratory pulp sheets; fiberboard, bedding pellets)

First processing trials with wet paludi-biomass such as reed canary grass in a thermo-mechanical process (defibration extruder + disk mill) resulted in a promising pulp. In dried form, this prepared raw material could be processed into first semi-finished products with promising properties. Possible applications in the pulp molding sector, in the bedding market of organic agriculture and as fiber material boards are just a few examples of the utilization potential of paludi-biomass in future.

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