

1-pager policy and megatrends framework for Europe 2030-2040

1. The consequences of widespread use of Artificial Intelligence and increasing automatization

The use of AI and digital automatization will create new opportunities for humankind and do many wonderful things. However, Society is underestimating the speed at which employment opportunities will be lost. Particularly in the transport sector (truck drivers, taxi drivers, delivery services, harbor workers), service sector (store clerks, fast food workers, telemarketers), predictable physical work (packaging, sorting, quality control), and even in specialized fields (administrative assistants, radiologists, accountants). This will lead to significant professional displacement of the EU population which might lead to profound reforms. The forest-based sector must consider how the jobs it offers evolve. **Autonomous vehicles** A significant percentage of new vehicles will have self-driving capability. Driving forces are AI, connectivity vehicle-vehicle and vehicle-the internet.

Agile manufacturing and 3D printing – traditional manufacturing technologies become more like processing. Small production series become more economically advantageous. New products including living tissue can be manufactured. The forest-based industries must become more innovative and customer oriented.

Controlled genome engineering (CRISPR Cas) – Tools for extremely precise gene editing opens up new ways to cure cancer and transmittable diseases, pesticide-free pest eradication. Policy barriers have been raised in the EU but the technology is likely to find applications in the rest of the world, in particular in China and in the US.

2. Direct consequences of climate change

More biotic and meteorological disturbances affecting forestry (pests, water scarcity, storms, flooding, drought, fires), but climate changes, although not intended, can also provide improved growth conditions.

3. Indirect consequences of climate change – policy objectives and technology investments

Renewable energy: On 14 June 2018 the Commission, the Parliament and the Council reached a political agreement which includes a binding renewable energy target for the EU for 2030 of 32%, with a clause for an upwards revision by 2023.

EU targets for 2030: 40% GHG emission reduction, +27% Renewable Energy Sources, 15% interconnectivity of electrical grid. The EU is counting on a more circular economy will lead to a CO₂-emission reduction of 450 million tonnes by 2030.

The EC has also published the vision for a **Climate neutral Europe by 2050:** which rely on electrification of energy intensive industries, a switch to energy saving technologies and to some extent electricity storage e.g. power to gas, power to heat and grid energy storage. Required additional investments (McKinsey estimate) to decarbonize the EU power sector is 100 bn Euro/yr.

4. New market places and consumer trends (beyond Uber and AirBnB)

The last decade, market and consumer trends have emerged that likely will have significant impact on the society in 2030/2040. The **Social economy** and **collaborative consumption** (AirBnB, UberEats, Uber, MamaBake) are offering new market places. Etsy offers a market place for the “handcrafted,

vintage, custom or unique". Similar innovations might become a tool for non-wood forest services as in Vision Target 3. The environmental footprint of these services is complicated to estimate.

Internet retailers (Amazon, Audible, Alibaba, Zalando, Spotify). Increasing use of packaging and transportation services and a decrease of classified ads and printed media, recession for malls and physical stores. One consequence for forest-based business models and logistics is the development of local and global markets: buying local and short distance for certain categories of products vs. global and online for others.

Alternative currencies and crypto currencies, although an interesting phenomenon on its own right, will primarily contribute by speeding up the adoption of **block-chain technologies** which in turn will allow for exact traceability throughout the value-chain, something that will allow for mass customisation and alleviate the problems with chain of custody in a more circular economy.

Sustainable consumption patterns and consumer awareness will most likely benefit the forest-based value-chain, in particular in the area of construction, textiles and materials substituting plastics.

The new markets and digitalised business models will influence the **work force** and the role of and access to future employees

Other factors to consider in the SRA

- Increasing plastics waste in the oceans –circular economy policies and single use plastics ban
- Urbanisation: Today, 75% of Europeans live in urban areas and by 2050 it will be 80% (Eurostat)
- Declining population in Europe but EU population size peaking by 2040. The global population will be growing with about 0.7 percent to about 9.2 Bn in 2040. (UN). Growth is rapid in Africa and south-west and central Asia.