

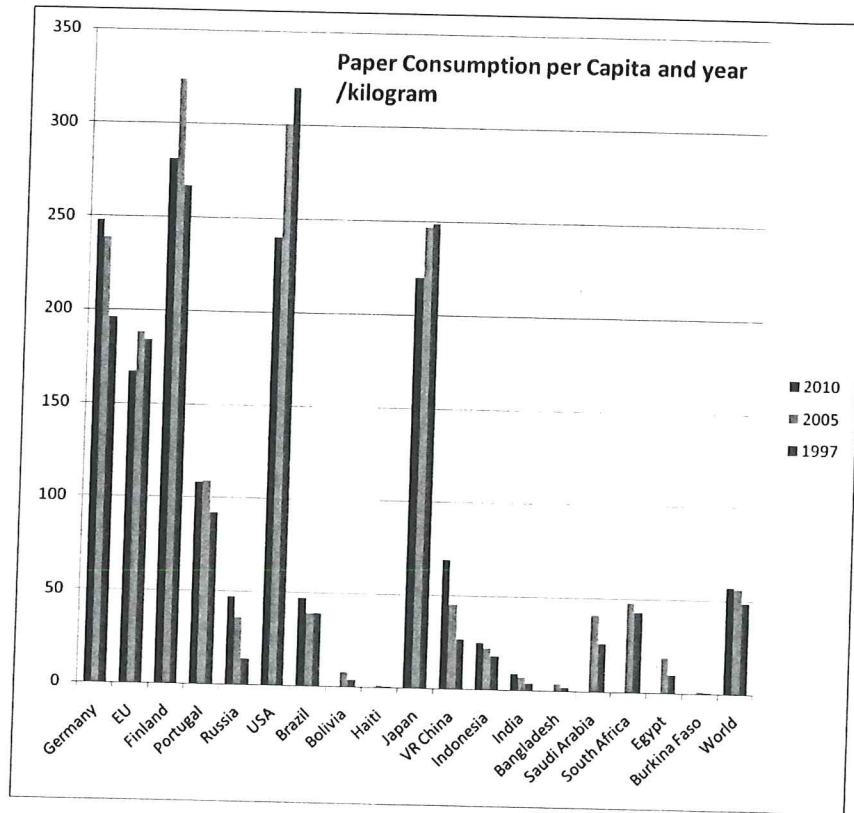
Paper Industry and Consumption in the last Twenty Years

Sabine Schachtner,
LVR-Industriemuseum Bergisch Gladbach
Sabine.Schachtner@lvr.de

This article interprets statistical data to describe the situation of the paper industry in the globalized world of today. Many of the global economy developments and facts that every newspaper reader has learned about in recent years can be seen in detail in the paper industry.

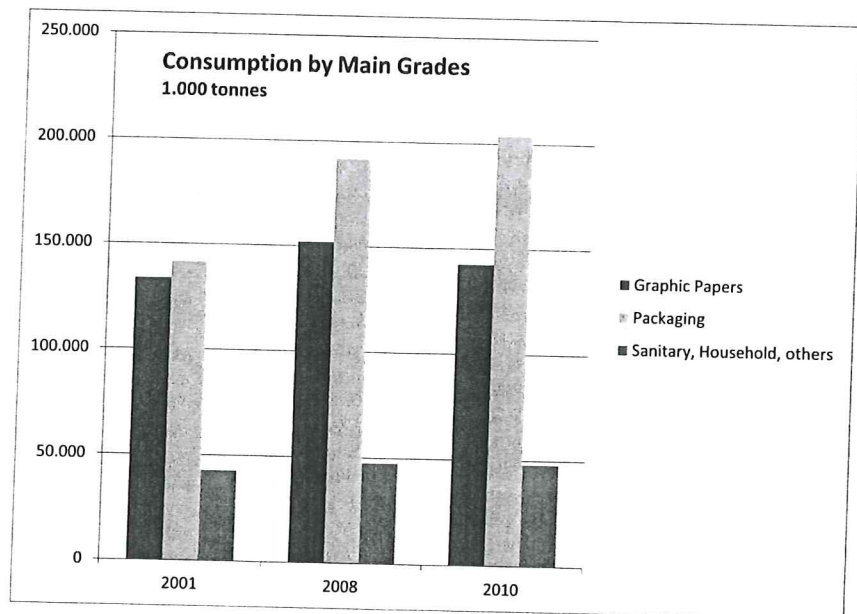
Since the late 1990s, the USA are no longer the top paper consumer country in the world. Nowadays, the consumption per capita is highest in Luxembourg (2010: 474 kilograms), Belgium (330 kilograms), and Finland (281 kilograms). In the USA consumption per capita was 240 kilograms in 2010. Consumption in Japan and in the entire European Union decreased as well; the Romanians have the lowest consumption in the EU (31 kilograms).

The figures show that paper consumption increases in emerging markets, e.g. in China, India, Indonesia, and Brazil. But there are still countries



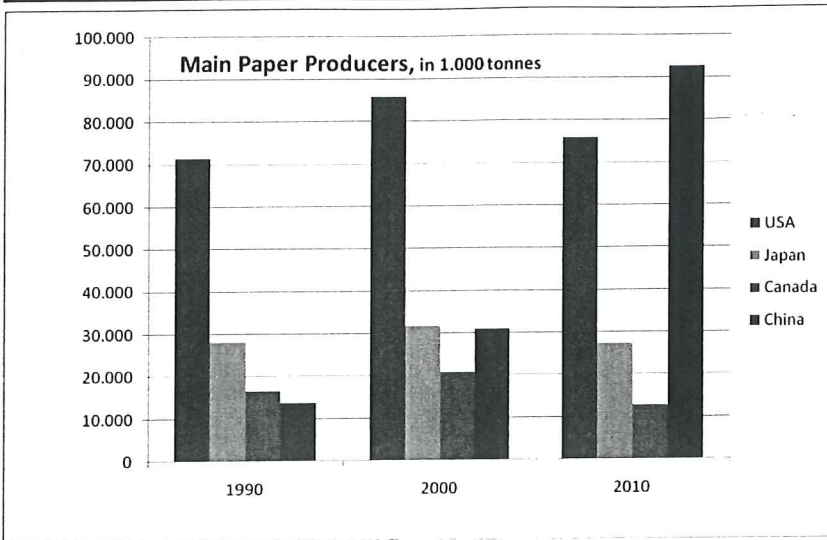
in which the consumption per capita is as low as it used to be in developed countries in the first half of the 19th century.

In the new millennium, the largest increase of paper consumption can be observed in packaging although there was a decrease in the USA and Europe due to the economic crisis 2008/2009. A further increase has been predicted. The same applies to sanitary and household papers. Ken Waghorne from RISI, a paper consulting company, states: „Tissue and Packaging become the Star Performers for the Global Paper Industry.“ (B.Taylor 2012, p.1) The main reason for this increase is the worldwide growth of the middle classes.



On the contrary graphic papers have been losing ground in recent years due to digitalization processes. The biggest loser is newsprint: Between 2008 and 2010 there was a decrease of 12%. A further decrease has been

predicted, in particular in the USA, while newsprint markets in Asia are still emerging with a predicted increase of 4% between 2011 and 2013. A development similar to that in the USA - electronic devices substitute paper - is expected for



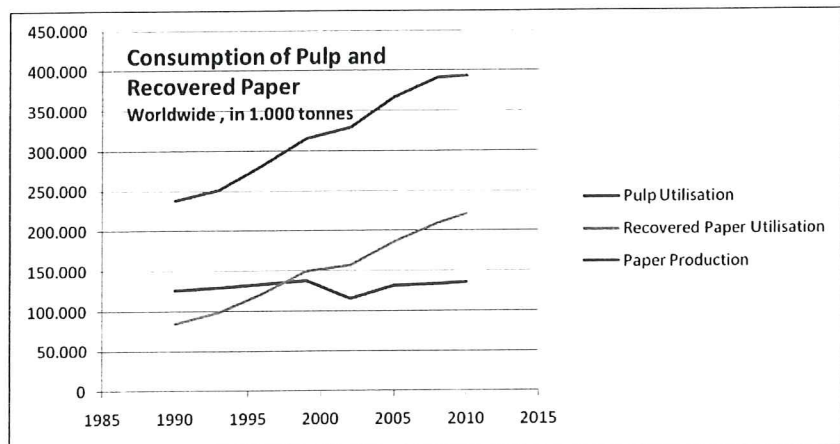
Asia as well though, only some years later. (*B. Taylor 2012, p.2*)

Today's largest global paper producers are more or less the same as 20 years ago, only the ranking within the group has changed.

In 1990, the United States were the largest producer by far, followed by Japan and Canada with a large distance.

The ranking was nearly the same in 2000, with China growing, having overtaken Canada. The tonnage had grown in all these countries.

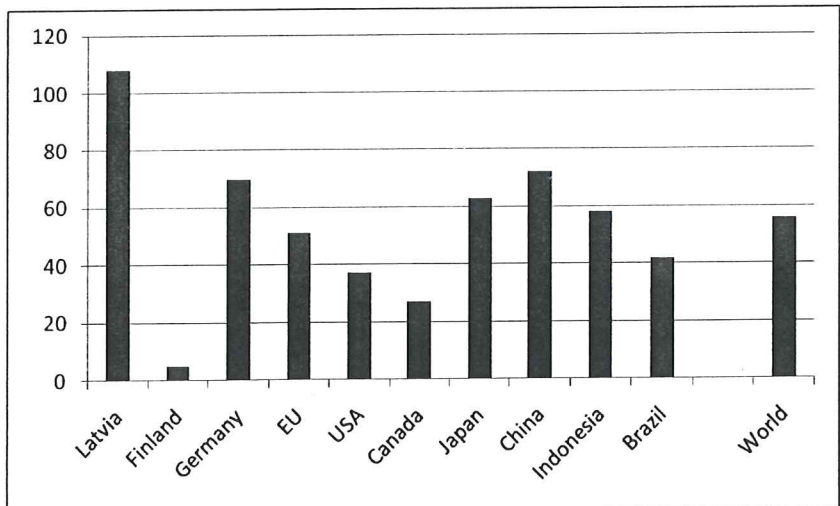
In 2010, China has become the biggest producer in the world. The growth since 1990 was enormous – in 2010 the tonnage was 6.7 times larger than in 1990. The USA produced less than twenty years ago, the same applies to Japan and Canada. One producer has been omitted in the charts for 2010: Germany – 1990 and 2000 on the fifth position in the world – has overtaken Canada, taking position four.



While paper production grew nearly steadily, pulp consumption is approximately on the same level as it was twenty years ago (1990: 126 million tonnes, 2010: 136 million tonnes). The use of recovered paper has increased.

Canada, the USA, and Finland in particular have low recycling rates. In the economy of all these countries, forestry plays an important role.

One might expect that in the emerging markets, the recycling rate would be high in order to save resources. But at least some of them – such as Indonesia and Brazil – have important pulp production sites – a fact that limits the growth of the recycling rate.



Recovered Paper Utilisation, in % of paper production

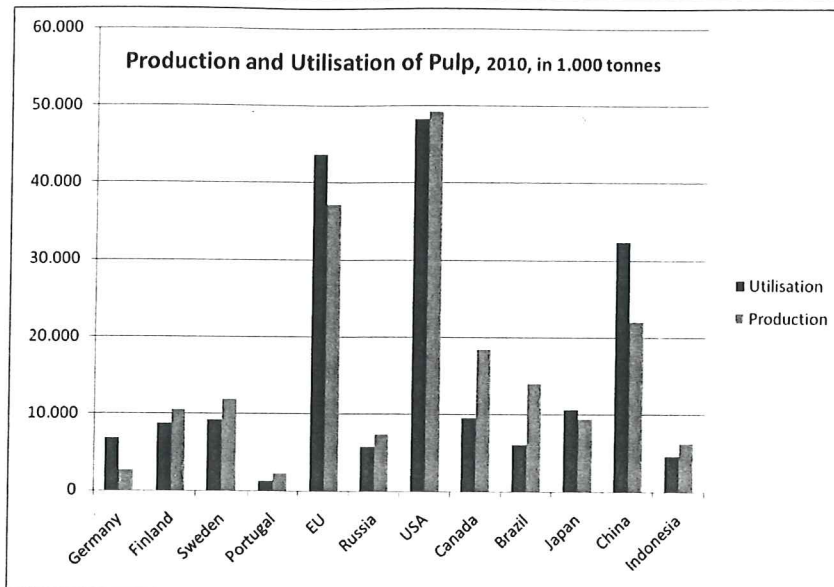
China as the world largest paper producer has to deal with difficult natural conditions for this industry as it is sparsely wooded. This is why the Chinese paper industry is based on chemo-mechanical pulp which has a higher rate of yield than chemical pulp. Energy-efficient methods are used to produce this pulp, and fast growing species are chosen for the plantations. Recently, China's paper technicians have been trying to increase the ageing resistance of papers produced with this pulp, e.g. by choosing a strict alkaline production

process. Pulp production and paper production sites are usually built side by side which makes drying the pulp unnecessary. (*Wochenblatt für Papierfabrikation* 2012/3, S.161 ff)

Countries rich in non tropical forests often became important pulp and paper producers in the second half of the 19th century. For this reason, their surplus amount of pulp is usually small – Sweden, Finland, Russia, the United States, Canada are examples. Tropical rain forests are not suitable for pulp production – there are too many different species, and the wood is too hard. So it was only in the last 10 to 20 years that pulp and also paper production came to some of the countries with tropical forests, usually based on plantations of fast growing species like eucalyptus or acacia. This applies to Brazil or Indonesia.

One can say by importing pulp, a country exports the ecological problems of pulp production such as logging and the emissions of the pulp producing sites.

These few statistics show that the changes in paper industry were really huge within the last twenty



years. They are caused by the global economic development and by digitalization, showing the same emerging markets as in other industries.

Literature:

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Taylor, B.: Pulp Fiction? In: www.pulp-paperworld.com, June 2012

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Living paper production among the lantern of northern Laos

Maria Malakou-Marinou Vlessas
Marinou Vlessas aeora@otenet.gr

Papermaking among East-Asian ethnic groups

On our first trip to northern Thailand and Laos (2004) we witnessed the living tradition of production and use of handmade paper in some Yao and Lanten villages. Believing that the region might offer an interesting field for the study of papermaking by specific ethnic groups such as the Yao, we made a second trip to this area towards the end of 2006. Minorities there were often compelled to withdraw to hilly, less fertile, soils due to pressure from the more extant Han-Chinese populations.

Relationships between the Yao and the Chinese cover the whole spectrum from open hostility to almost full integration.

In recent decades, research on Asian papermaking has made progress thanks to the efforts by some academics and enthusiastic amateurs, who have recorded techniques which are gradually dying out. In East Asia one can observe a true 'archipelago' of papermaking techniques, with factors such as plant-selection, pulp-production, sheet-formation, etc., being combined in every possible permutation. Thus one can trace the origin of paper by analyzing its manner of production from an ethno-technical point of view. We consider our contribution as a part of a wider, although unofficial, Research Program that others [1] started years ago to obtain a clearer view, not only of papermaking techniques but also of some inter-ethnic dynamics. Selective technical