ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

Διάρθρωση και προβλήματα της ελληνικής οικονομίας

Μ. Παπαναστασίου: Food Security και παγκόσμια ευημερία

Διδάσκων: Ιωάννα-Σαπφώ Πεπελάση

Τμήμα: Οικονομικής Επιστήμης

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο

ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ
ΕΚΠΑΙΔΕΥΣΗ ΚΑΙ ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗ
επένδυση στην κοινωνία της γνώσης
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ & ΘΡΗΣΚΕΥΜΑΤΩΝ, ΠΟΛΙΤΙΣΜΟΥ & ΑΘΛΗΤΙΣΜΟΥ
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΔΙΑΧΕΙΡΙΣΗΣ

ΕΣΠΑ 2007-2013
πρόγραμμα για την ανάπτυξη
ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΩΝΙΚΟ ΤΑΜΕΙΟ

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

Χρηματοδότηση

- Το παρόν εκπαιδευτικό υλικό έχει αναπτυχθεί στα πλαίσια του εκπαιδευτικού έργου του διδάσκοντα.
- Το έργο «**Ανοικτά Ακαδημαϊκά Μαθήματα στο Οικονομικό Πανεπιστήμιο Αθηνών**» έχει χρηματοδοτήσει μόνο τη αναδιαμόρφωση του εκπαιδευτικού υλικού.
- Το έργο υλοποιείται στο πλαίσιο του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» και συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο) και από εθνικούς πόρους.

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο

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Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

Άδειες Χρήσης

Food Security και παγκόσμια ευημερία. Αναλύοντας τις διεθνείς αλυσίδες παραγωγής στη βιομηχανία τροφίμων

Marina Papanastassiou, PhD
Professor of International Business
Middlesex University Business School, Middlesex University, London, UK

Food Security: Εισαγωγή

- Το Food Security αποτελεί κύρια επιδίωξη παγκόσμιας ευημερίας με την υιοθέτηση των Βιώσιμων Στόχων Ανάπτυξης (Sustainable Development Goals- SDGs)στα πλαίσια της μετά- 2015 αναπτυξιακής ατζέντας του ΟΗΕ.

Food Security: Εισαγωγή

- Οι σύγχρονες πολυεθνικές επιχειρήσεις ελέγχουν σημαντικό κομμάτι της παγκόσμιας παραγωγής τροφίμων και ποτών μέσα από ένα πολυδαίδαλο δίκτυο αλυσίδων αξίας.

Food Security: Εισαγωγή

- Το θέμα της παρουσίασης εστιάζει στην ανάλυση της σχέση μεταξύ Πολυεθνικών Επιχειρήσεων και Food Security και εξηγεί πόσο καθοριστικός είναι ο ρόλος των Πολυεθνικών επιχειρήσεων για τη μελλοντική επάρκεια τροφίμων ποιοτικά και ποσοτικά μέσω βιώσιμων διεθνών επενδύσεων. Μελέτη περίπτωσης : **Η σοκολάτα!!**

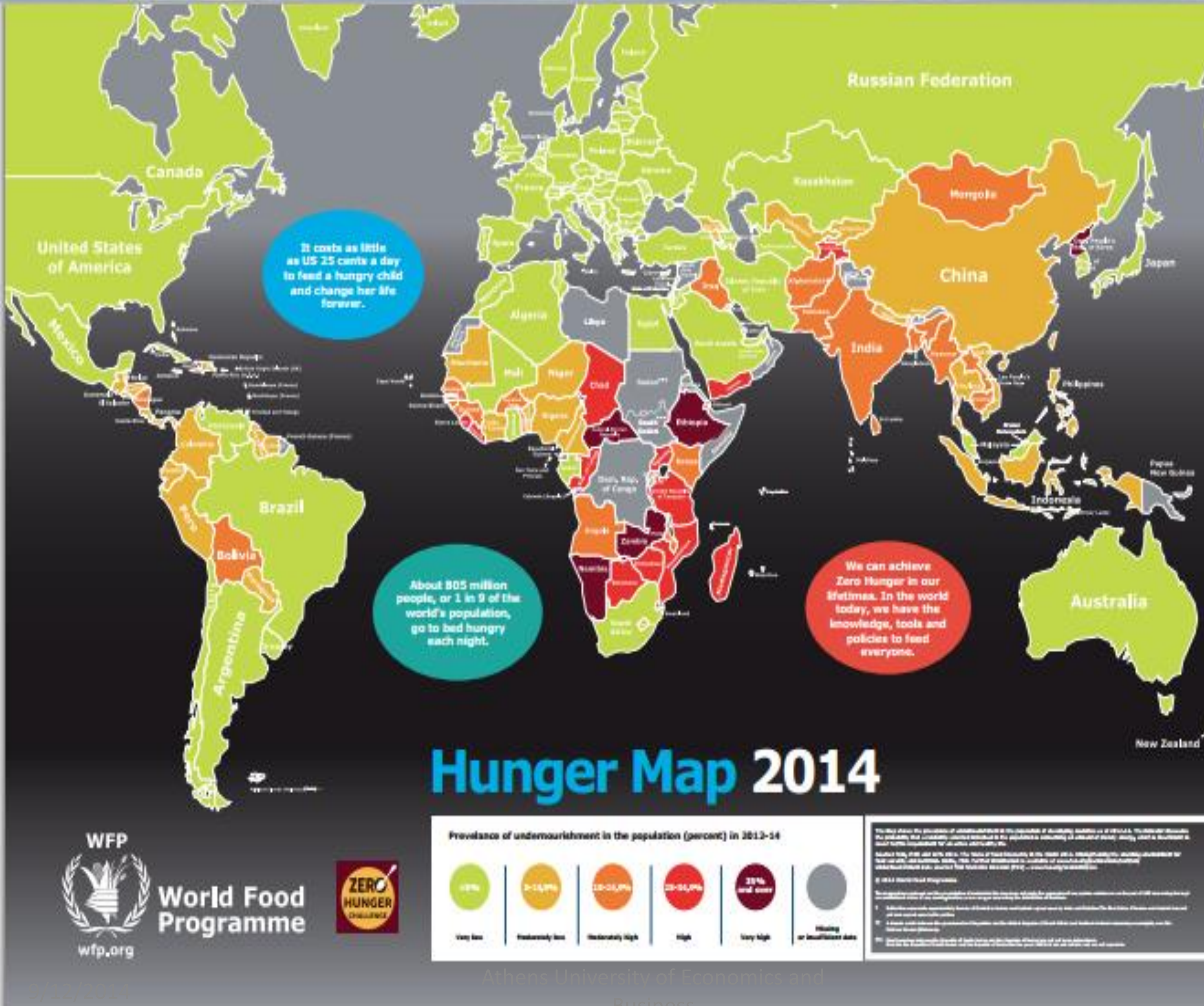
Do we have enough food?

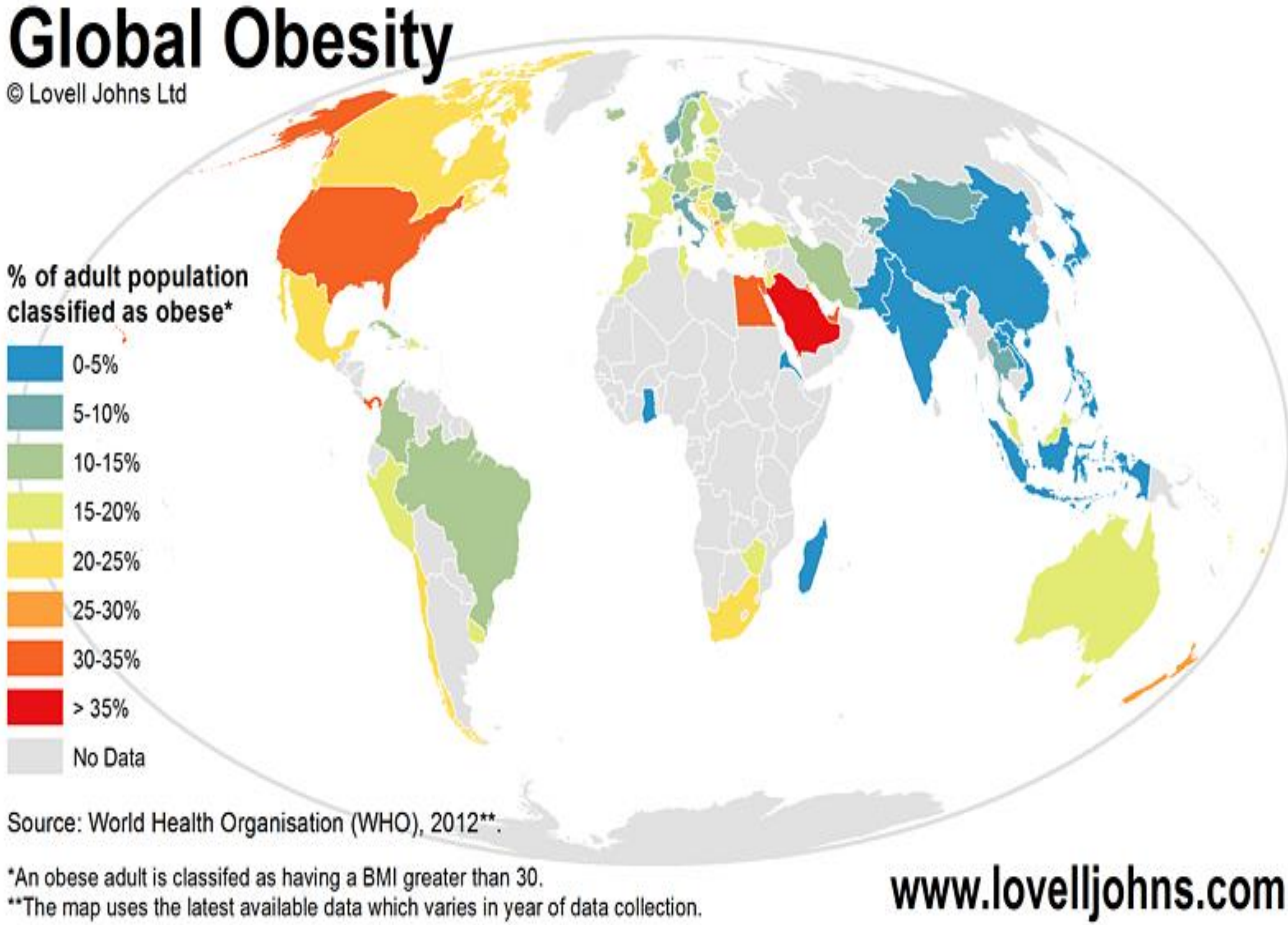
- The world has ample food.
- Yet a billion of people go hungry, while another billion over-consume.
- Food systems are under severe stress due to climate change, global population increase reaching 9 billion in 2050, an observed diet shift to animal products and continuous resource degradation.

Famine in the world

- ***From Africa and Asia to Latin America and the Near East, there are 805 million people in the world who do not get enough food to lead a normal, active life.***

Source: http://www.wfp.org/content/hunger-map-2014


Russian Federation
Canada
United States of America
Mexico
Brazil
Bolivia
Argentina
China
India
Mongolia
Kazakhstan
Japan
Philippines
Indonesia
Papua New Guinea
Australia
New Zealand
Algeria
Libya
Egypt
Mali
Niger
Chad
Ethiopia
It costs as little as US 25 cents a day to feed a hungry child and change her life forever.
About 805 million people, or 1 in 9 of the world's population, go to bed hungry each night.
We can achieve Zero Hunger in our lifetimes. In the world today, we have the knowledge, tools and policies to feed everyone.
Hunger Map 2014
Prevalance of undernourishment in the population (percent) in 2012-14
35% and over
WFP
World Food Programme
wfp.org
ZERO HUNGER


Global Obesity
© Lovell Johns Ltd
% of adult population classified as obese*
0-5%
5-10%
10-15%
15-20%
20-25%
25-30%
30-35%
> 35%
No Data
Source: World Health Organisation (WHO), 2012**.
*An obese adult is classifed as having a BMI greater than 30.
**The map uses the latest available data which varies in year of data collection.
www.lovelljohns.com

Multinational Corporations

- Major stakeholders in the achievement of sustainable investment and growth in the agro-food sector globally are Multinational Corporations (MNCs). MNCs lead global value chains and thus play a determining role in food security globally.

Definitions: Food Security

- The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”.
- (http://www.who.int/trade/glossary/story028/en/)

Food Security

- Food security is built on three pillars:
- Food availability: sufficient quantities of food available on a consistent basis.
- Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

(http://www.who.int/trade/glossary/story028/en/)

Food security not the same around the globe

- The 2014 Global Food Security Index (GFSI) reflects that although FS is a global issue has distinctive regional characteristics: "For example, reduced Quality & Safety pulled down scores in Central & South America and in Asia & Pacific, both of which were hurt by reduced diet diversification.
- By contrast, Europe and MENA experienced declines in their Availability scores, owing to more limited food supplies in both regions, tightening public expenditure on agricultural research and development (R&D) in Europe, and higher volatility of agricultural production in MENA".

(See, http://foodsecurityindex.eiu.com/Index/Overview)

Performance of countries based on their 2014 food security score

Score Rank

Global Regional

Global ranking	Country	Overall score	Affordability	Availability	Quality & Safety
1st	United States	89.3	94.8	85.5	85.7
2nd	Austria	85.5	89.4	82.8	83.4
=3rd	Netherlands	84.4	88.0	81.3	84.2
=3rd	Norway	84.4	89.7	80.1	82.8
5th	Singapore	84.3	94.0	78.5	76.0
6th	Switzerland	84.2	90.0	80.2	80.9
7th	Ireland	84.0	89.2	79.1	84.6
=8th	Canada	83.7	88.8	79.4	83.2
=8th	Germany	83.7	88.2	80.9	80.5
10th	France	83.4	85.9	79.7	87.6
11th	Denmark	83.3	88.4	78.5	83.6
12th	Sweden	82.4	88.4	76.9	82.4
13th	New Zealand	82.2	85.2	79.9	81.1
14th	Belgium	82.0	87.5	76.8	82.2
15th	Australia	81.9	91.8	71.9	84.8
16th	United Kingdom	81.6	87.8	76.2	80.8
17th	Israel	80.6	83.3	75.4	88.5
18th	Portugal	80.3	80.8	77.1	87.6
19th	Finland	79.9	86.6	72.7	82.9
20th	Spain	79.8	83.9	74.1	85.0
21st	Japan	77.8	85.0	70.6	79.3
22nd	Italy	77.6	84.2	68.9	84.9
23rd	Czech Republic	74.6	81.6	67.1	77.5
24th	Greece	74.3	77.3	67.0	86.8
25th	South Korea	73.2	78.0	67.4	77.1
26th	Poland	72.7	78.6	66.3	75.7
27th	Chile	72.5	74.5	71.2	71.3
28th	Kuwait	72.2	83.1	61.2	75.3
29th	Hungary	71.2	78.8	62.3	76.6
30th	United Arab Emirates	70.9	87.2	55.2	73.2

Global ranking	Country	Overall score	Affordability	Availability	Quality & Safety
80th	Kenya	40.1	83rd	79th	84th
81st	Tajikistan	38.7	76th	=94th	86th
=82nd	Benin	38.4	=79th	92nd	91st
=82nd	Senegal	38.4	85th	82nd	88th
84th	Cameroon	38.1	=79th	97th	=76th
85th	Nepal	37.7	93rd	75th	82nd
86th	Myanmar	37.6	87th	80th	92nd
87th	Nigeria	36.5	102nd	73rd	81st
88th	Bangladesh	36.3	88th	84th	100th
=89th	Ethiopia	35.8	89th	=85th	101st
=89th	Sierra Leone	35.8	91st	90th	89th
91st	Yemen	35.2	82nd	103rd	99th
92nd	Angola	34.4	86th	98th	97th
93rd	Rwanda	34.2	104th	=88th	75th
94th	Malawi	33.9	95th	96th	90th
95th	Mali	33.4	105th	74th	98th
96th	Cambodia	33.1	90th	101st	93rd
97th	Sudan	32.7	94th	105th	85th
98th	Zambia	32.6	101st	83rd	102nd
99th	Guinea	32.5	92nd	102nd	95th
100th	Burkina Faso	31.6	97th	=99th	94th
101st	Mozambique	31.0	98th	=88th	109th
102nd	Niger	30.5	103rd	106th	78th
103rd	Haiti	30.2	96th	104th	103rd
104th	Tanzania	29.9	106th	91st	105th
105th	Burundi	28.8	99th	108th	87th
106th	Togo	28.4	100th	=99th	108th
107th	Madagascar	27.7	109th	93rd	106th
108th	Chad	25.5	107th	109th	96th
109th	Congo (Dem. Rep.)	24.8	108th	107th	104th

TOP Food and Beverages (F&B) MNCs

- The top 100 F&B MNCs account for one third of production and more than one half of the technological activities of the world's food and beverage industry.
- Active in all aspects of GVCs they internationalize their R&D, they have extensive production networks and they collaborate closely with their suppliers by providing, developing and exchanging information, products and services.

- http://www.foodengineeringmag.com/ext/resources/Issues/2013-9/Top100List1.pdf
- Filippaios, F., Papanastassiou, M., Pearce, R. and Rama, R. (2009), "New forms of organisation among the world's 100 largest food and beverages multinationals", Research Policy, 38, 6, pp. 1032-1043.

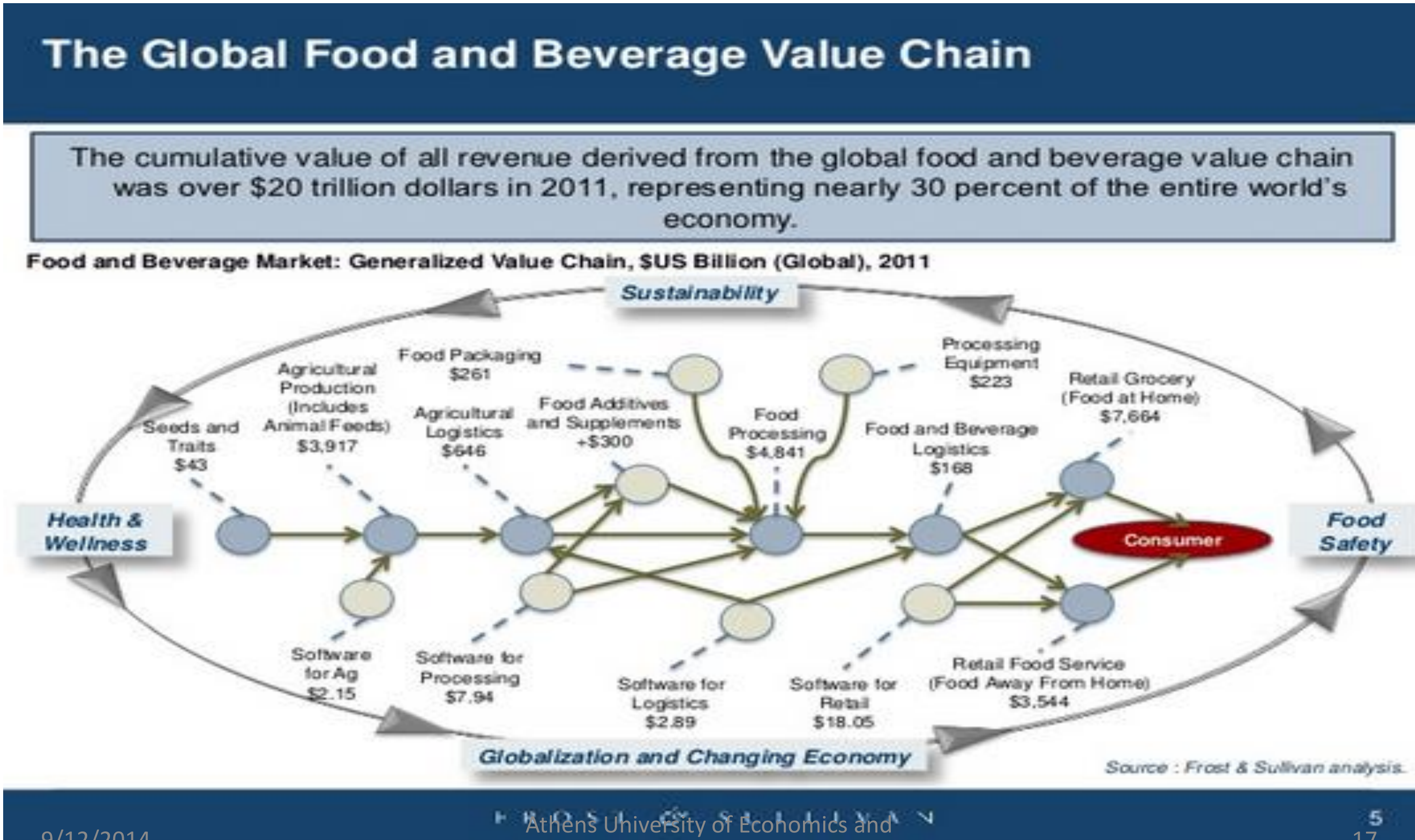
Top 100 food and beverages companies

(September 2013 | **Food Engineering** | www.foodengineeringmag.com)

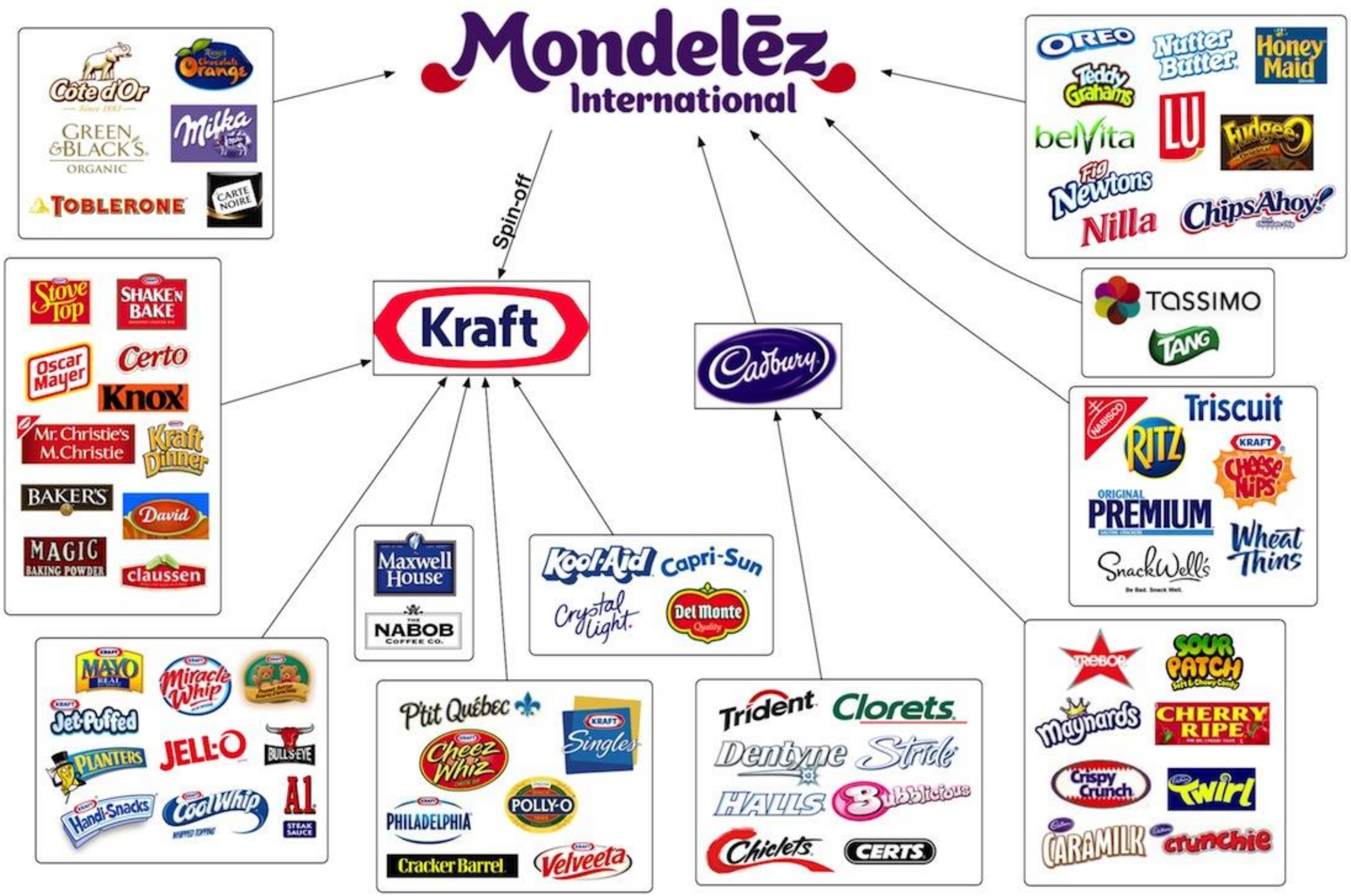
Rank	Company	Food Sales ($ millions)	Year Ending
1	Nestlé	87,977	Dec. 12
2	PepsiCo, Inc.	65,492	Dec. 12
3	The Coca-Cola Company	48,017	Dec. 12
4	Archer Daniels Midland Company	46,829	Jun. 12
5	Anheuser-Busch InBev	39,758	Dec. 12
6	JBS	38,675	Dec. 12
7	Mondelēz International	35,015	Dec. 12
8	SABMiller	34,487	Mar. 13
9	Tyson Foods	33,278	Sep. 12
10	Cargill	32,500	May 13
11	Unilever	31,180	Dec. 12
12	Mars	30,000	Dec. 12
13	Danone	26,920	Dec. 12
14	Heineken	23,715	Dec. 12
15	Kirin Brewery Co.	22,130	Dec. 12
16	Lactalis	20,255	Dec. 12
17	Suntory	19,370	Dec. 12
18	Kraft Foods Group	18,339	Dec. 12
19	Asahi Breweries	18,850	Dec. 12
20	Diageo	17,005	Jun. 12

From Frost and Sullivan

(http://www.slideshare.net/FrostandSullivan/mega-trends-review-growth-strategy-optimization-in-the-global-food-beverage-industry-value-chain)



Source: http://anh-europe.org/news/nestle-ethics-called-into-question-as-it-plans-to-develop-medical-food-range



Source: http://convergencealimentaire.info/

Pepsico

Source: http://convergencealimentaire.info

Top 25 Global Food Retailers 2013

SN TOP 25 WORLDWIDE FOOD RETAILERS

SN's Top 25 worldwide food retailers for 2013 include annual sales for food, nonfood and wholesale operations; sales were based on current exchange rates. Store counts include franchised or licensed locations and may include nonfood outlets. Source: Planet Retail (www.planetretail.net) Read a related story on the supermarket business in Mexico.

1. Wal-Mart Stores 2013
2. Tesco 2013
3. Carrefour 2013
4. Costco 2013
5. Kroger Co. 2013
6. Schwarz Group 2013
7. Metro Group 2013
8. Aldi 2013
9. Target Corp. 2013
10. AEON 2013
11. Rewe Group 2013
12. Seven & I 2013
13. Auchan 2013
14. Edeka 2013
15. Casino Group 2013
16. Coles Group 2013
17. Woolworths (AUS) 2013
18. ITM (Intermarche) 2013
19. Leclerc 2013
20. Safeway (USA) 2013
21. Ahold 2013
22. Sainsbury's 2013
23. Supervalu 2013
24. Loblaw Cos. 2013
25. Delhaize Group 2013

Source: http://supermarketnews.com/top-25-global-food-retailers-2013

Walmart

Country:

Where in the world is Walmart?

Zoom and pan within the interactive map to select a country and learn more about each location, including U.S. state details.

From our humble beginnings as a small discount retailer in Rogers, Ark., Walmart has opened thousands of stores in the United States and expanded internationally. Through this model of expansion, which brings the right store formats to the communities that need them, we are creating opportunities and bringing value to customers and communities around the globe.

Locations at a glance	
Total retail units on October 31, 2014	11,156
Walmart U.S.	4,344
Sam's Club	643
Walmart International	6,169

Today, Walmart operates over **11,000 retail units** under 71 banners in **27 countries**. We employ **2.2 million associates** around the world — 1.3 million in the U.S. alone.

Source: http://corporate.walmart.com/our-story/our-business/locations/

Global Value Chains

Table IV.1. Perspectives on GVCs

	International Business "Firm perspective"	Economics "Country perspective"
Defining concepts	• GVCs are defined by *fragmented* supply chains, with internationally dispersed tasks and activities *coordinated* by a lead firm (a TNC).	• GVCs explain how exports may incorporate imported inputs; i.e. how exports include foreign and domestically produced value added.
Scope	• GVCs are present predominantly in industries characterized by such supply chains, with typical examples including electronics, automotive and textiles (although the scope is widening to agriculture and food and offshore services, among others).	• GVCs and value added trade, by design and by the necessities of statistical calculation, encompass *all trade*; i.e. all exports and imports are part of a value chain.
Role of investment and trade	• Investment and trade are complementary but alternative modes of international operation for firms; i.e. a firm can access foreign markets or resources by establishing an affiliate or through trade.	• Investment is needed to build export capacity (i.e., it creates the factors of production required to generate value added exports); both investment and value added in exports are GDP contributors.

Source: UNCTAD.

Source: http://unctad.org/en/PublicationsLibrary/wir2013_en.pdf

Food Value Chains

(source: http://www.fao.org/fileadmin/templates/esa/Papers_and_documents/WP_13_05_Gomez_Ricketts.pdf)

Table 1. Food value chain typologies and their hypothesized influences on nutrition

Type	Participants	Implications for Food Access	Hypothesized Nutritional Impacts
Traditional	Traditional traders buy primarily from smallholder farmers, and sell to consumers and traders in wet, mostly local, markets.	**Affordability**: A local 'clearing-house' for products, with flexible prices, product volumes, and quality standards. **Availability**: Food 'hub' for consumers and local 'mom and pop' stores to access directly from traders and smallholder farmers; market offerings are highly dependent on production seasonality.	• Traditional FVCs help reduce micronutrient deficiencies and undernourishment by offering low-priced fruits, vegetables, livestock products, and staples, particularly in rural areas and in poor neighborhoods of urban areas. • Production seasonality, combined with lack of post-harvest and distribution infrastructure, increase FVC intermediation costs and limit the ability of traditional FVCs to reduce micronutrient deficiencies and undernourishment.
Modern	Domestic and multinational food manufacturers procure primarily from commercial farms and sell through modern supermarket outlets.	**Affordability**: Economies of scale enable the production, marketing, and distribution of packaged/processed foods at low per-unit prices. **Availability**: Modern supermarkets provide year round, wide product assortment, primarily in urban areas; supermarkets are expanding successfully the market for processed and packaged foods.	• Modern FVCs may contribute to alleviate micronutrient deficiencies by offering a wide assortment of products year round; but supermarket's physical location and quality standards may imply higher retail prices, missing the poor. • Modern FVCs may contribute to obesity/overweight malnutrition by expanding the reach of inexpensive, calorie-dense processed/packaged foods, primarily in urban areas.

Food Value Chains

(source: http://www.fao.org/fileadmin/templates/esa/Papers_and_documents/WP_13_05_Gomez_Ricketts.pdf)

Modern-to-traditional	Domestic and multinational food manufacturers sell through the network of traditional traders and retailers (e.g., 'mom and pop' stores).	**Affordability**: Food manufacturers benefit from economies of scale to connect with traditional distributors and retailers, offering low-priced processed foods to reach low income consumers. **Availability**: By linking with traditional retailers, food manufacturers develop intense distribution strategies in urban areas and in rural, isolated markets.	• Expansion of processed/packaged foods into isolated, rural regions may alleviate undernourishment; but it can result in over-nutrition among urban consumers. • Food fortification initiatives focusing on modern-to-traditional FVCs may contribute to reduce micronutrient malnutrition.
Traditional-to-modern	Supermarkets and food manufacturers source food from smallholder farmers and traders.	**Affordability**: Increased income opportunities in high value crop and livestock production for smallholder farmers and traders can expand food budgets because most are net-food buyers. **Availability**: Increased production and crop diversification may increase food available for local consumption.	• Traditional-to-modern FVCs may reduce micronutrient deficiencies and undernourishment of smallholder farmers through and traders through higher incomes leading to diet diversification. • Opportunities for smallholder farmers and traders to benefit directly from participation appear limited and may miss asset-poor farmers; substantial benefits happen through off-farm employment opportunities.

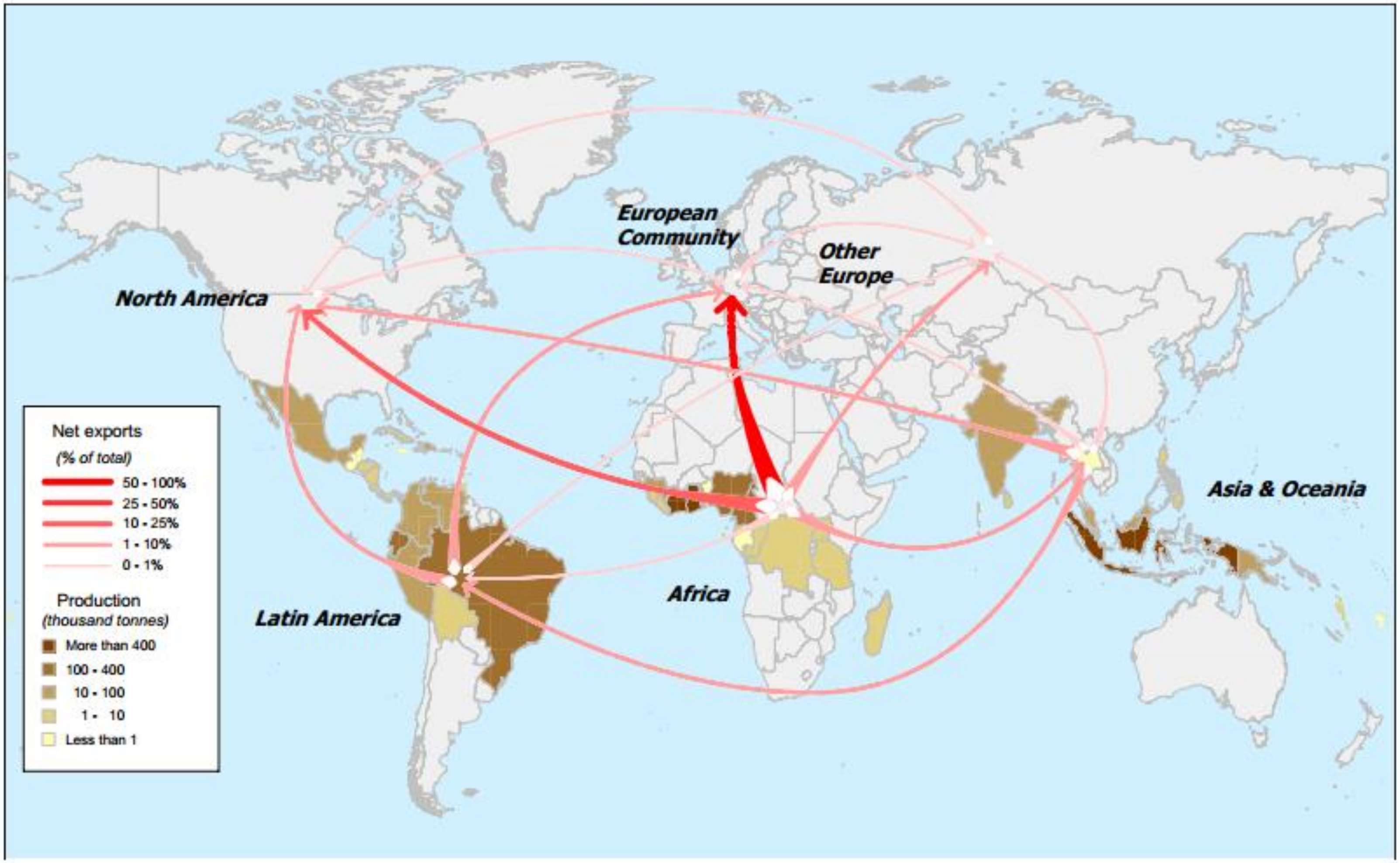
Source: Developed by authors based on the review of the literature.

Chocolate Facts

- Demand for cocoa is predicted to rise by 30% by 2020.
- Steady growth over the last hundred years has transformed the chocolate confectionary market into an $80bn a year global industry.
- Around 3.5 million tonnes of cocoa are produced each year. But rising incomes in emerging markets like India and China, combined with anticipated economic recovery in the rich North, have led to industry forecasts of a 30% growth in demand to more than 4.5 million tonnes by 2020.

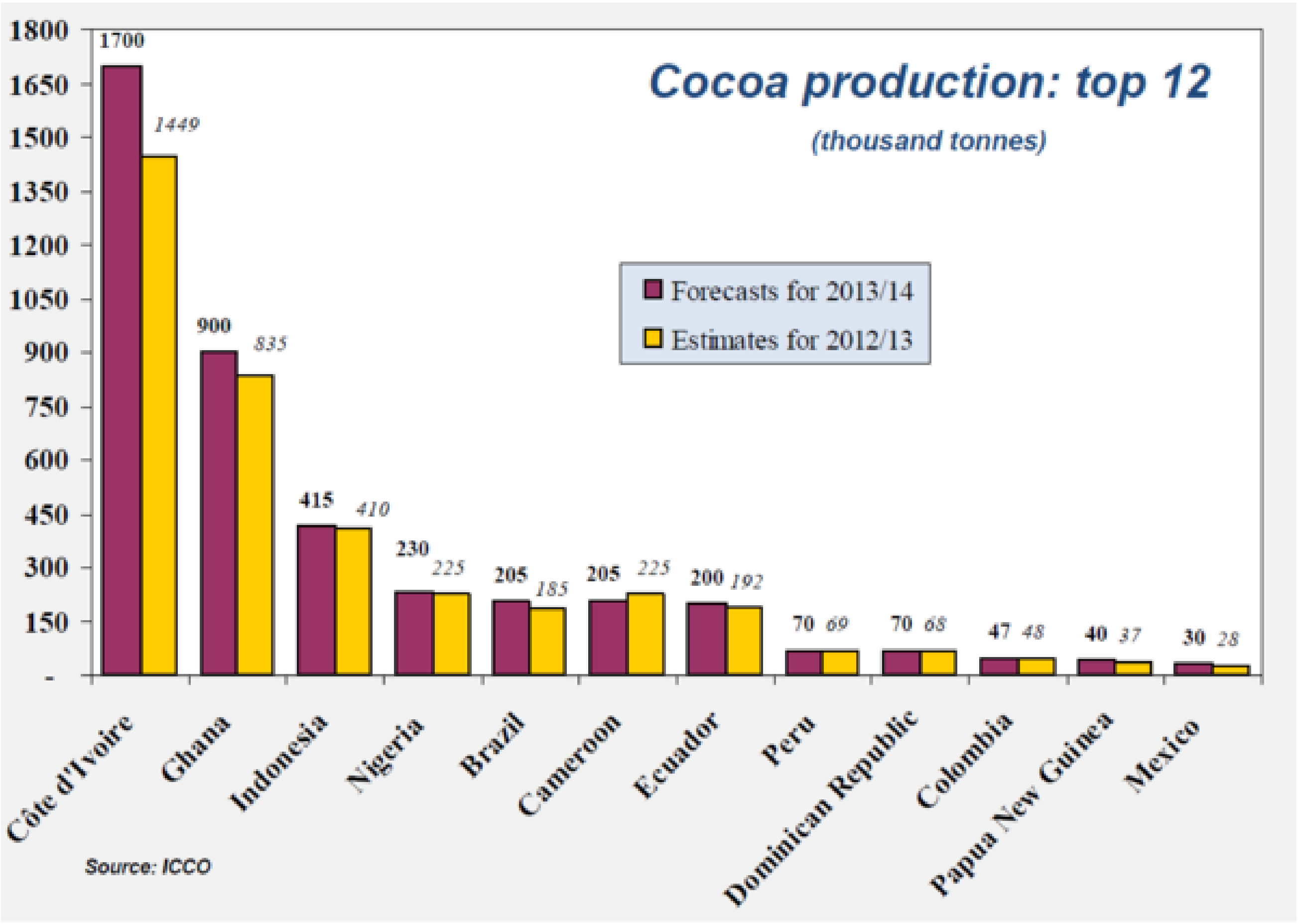
Source: http://www.theguardian.com/sustainable-business/fairtrade-partner-zone/chocolate-cocoa-production-risk

Production and net exports of cocoa beans in 2005/06



Source: http://www.icco.org/statistics/other-statistical-data.html

Μεγαλύτεροι παραγωγοί κακάο



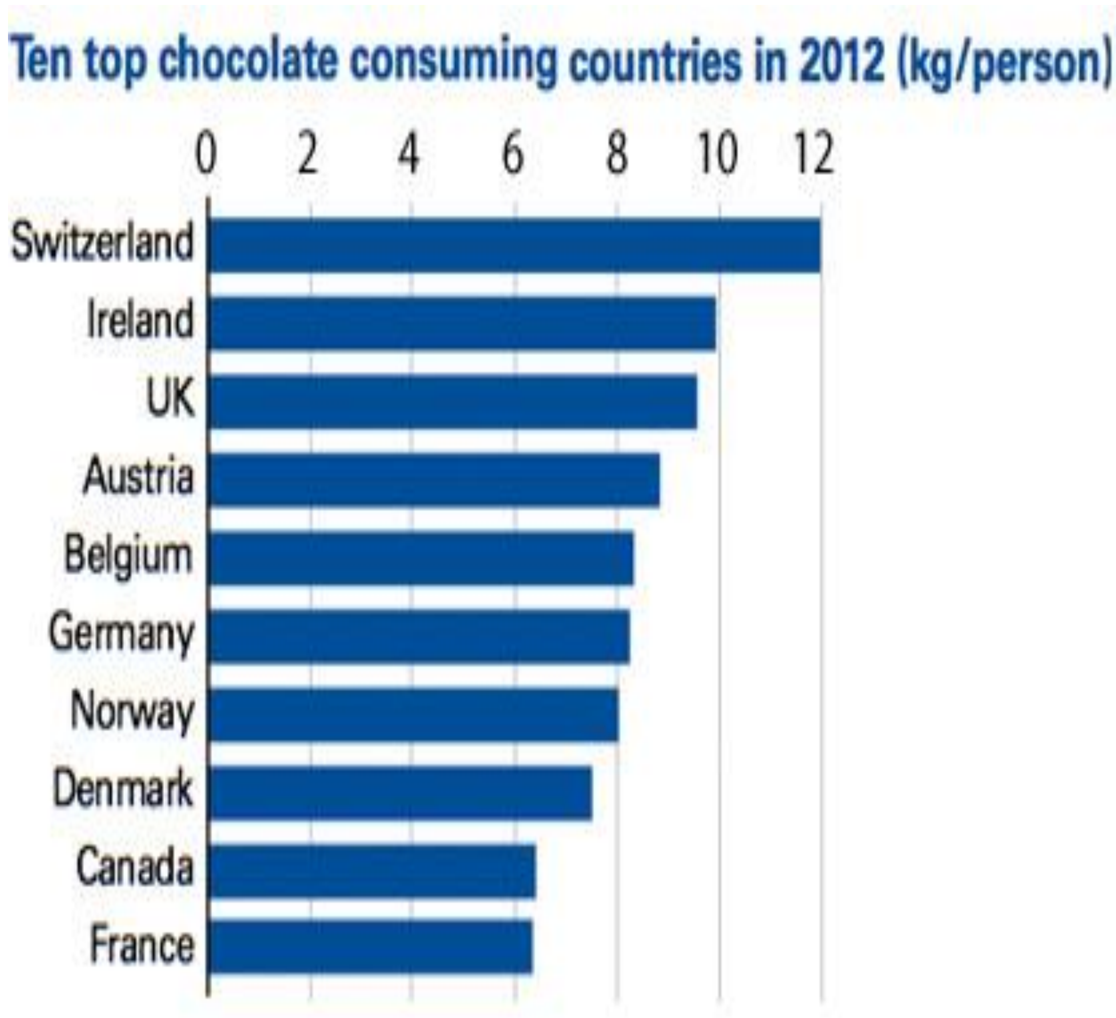
Source: http://www.confectionerynews.com/Commodities/The-future-of-cocoa-growing-Emerging-markets

Πωλήσεις σοκολάτας- πολυεθνικές σοκολάτας

Source: http://lt.makechocolatefair.org/temos/cocoa-prices-and-income-farmers

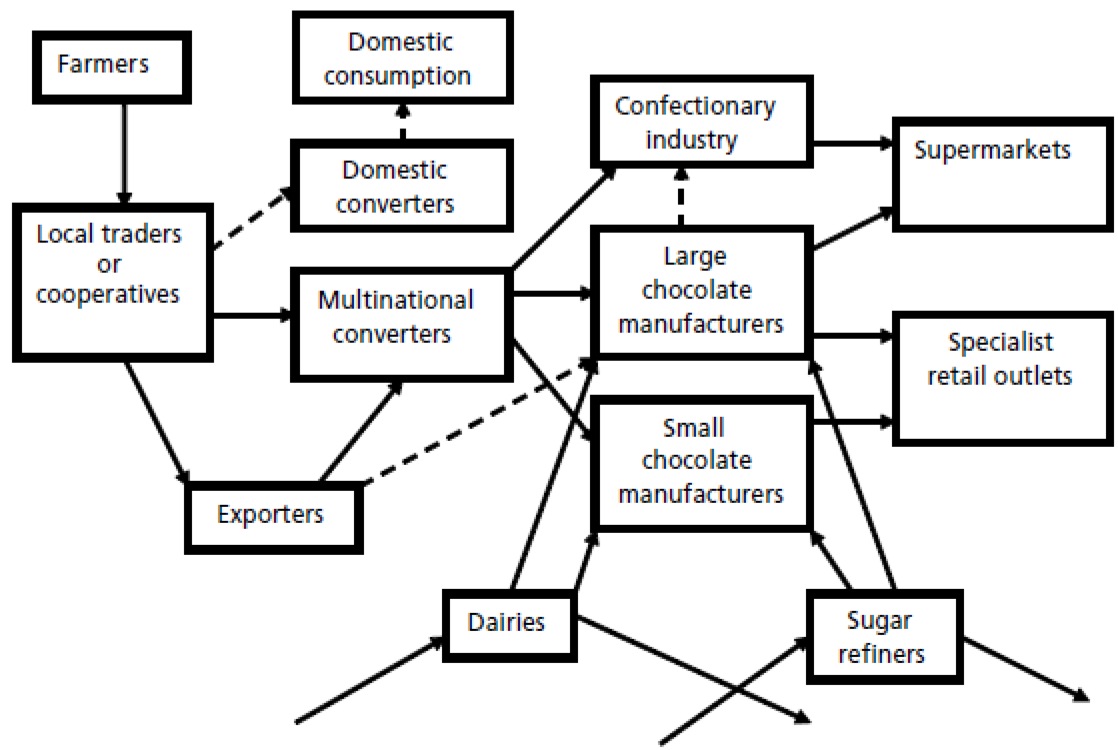
Μεγαλύτεροι καταναλωτές σοκολάτας

Source: http://www.consultancy.uk/news/530/kpmg-swiss-and-brits-largest-chocolate-consumers



Από το κακάο στο ψυγείο μας

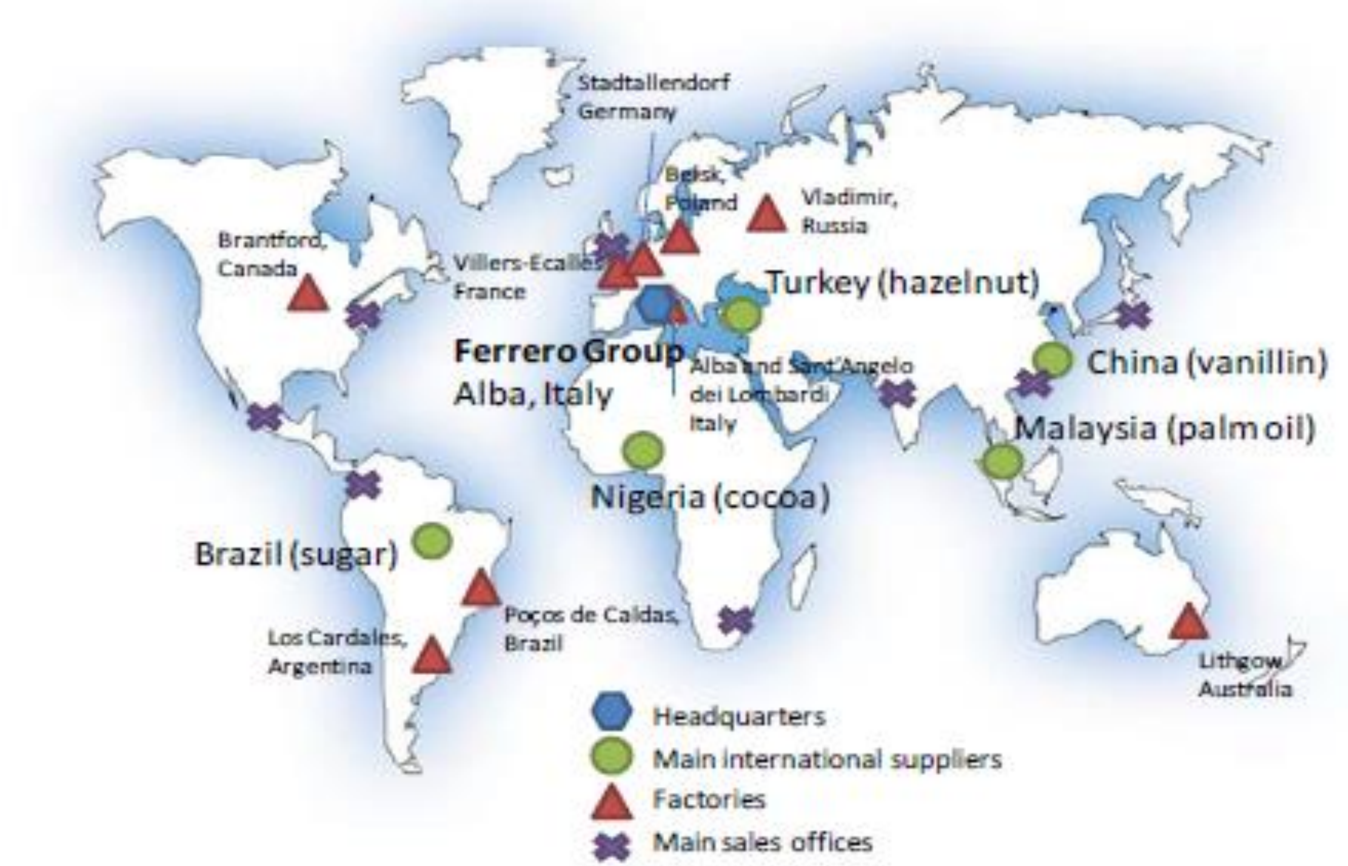
FIGURE 2
The cocoa-chocolate supply chain



Source: Gilbert, C.L , **Value chain analysis and market power in commodity processing with application to the cocoa and coffee sectors**, Commodity Market Review, 2007-2008, FAO

Nutella®

Figure 6. The Nutella® global value chain



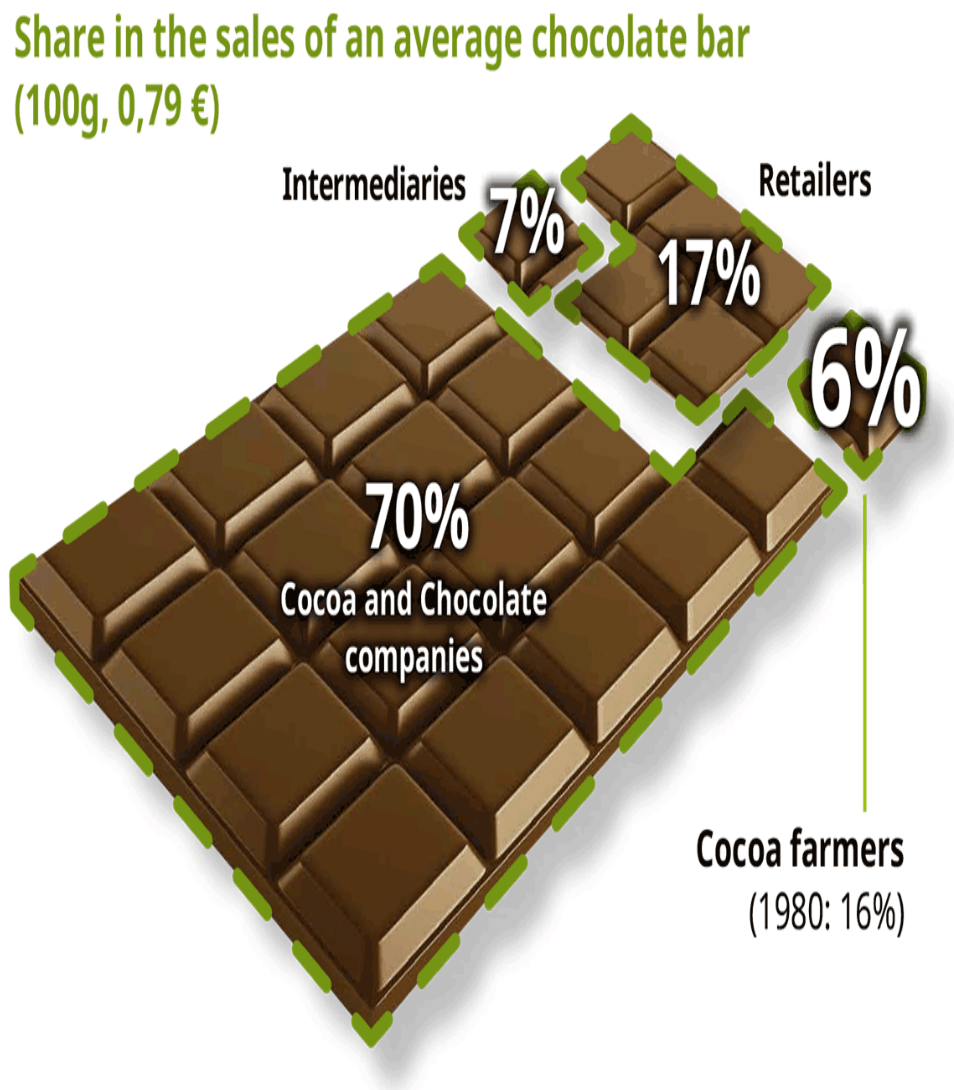
Source: Ferrero, Sourcemap and various on-line sources.

Source: http://www.oecd.org/dac/aft/MappingGlobalValueChains_web_usb.pdf

The Nutella® Facts

- 250,000 tons of Nutella® are sold in 75 countries each year. Though Ferrero International SA, the company that produces the spread, is based in Italy, they have nine global factories: five in Europe, one in Russia, one in North America, two in South America, and one in Australia.
- What's most amazing about the OECD report is just how many countries are suppliers of Nutella® ingredients. The hazelnuts come from Turkey, cocoa from Nigeria, palm oil from Malaysia, sugar mainly from Brazil (but also from Europe) and the vanilla flavor from China.
- Nutella® is then sold in 75 countries through sales offices.
- The location of production is close to final markets where Nutella® is in high demand (Europe, North America, South America and Oceania).

Read more:
http://www.businessinsider.com/nutella-map-2013-12#ixzz3Kq1CzaMu
http://www.oecd.org/dac/aft/MappingGlobalValueChains_web_usb.pdf



Source: http://lt.makechocolatefair.org/temos/cocoa-prices-and-income-farmers

Corporate Social Responsibility and F&B MNCs

- Taking into consideration the strong position of MNCs and their GVCs is not surprising that their role and commitment to fortifying sustainable solutions for FS has been questioned.
- In response to such concerns we do observe that many of the top 100 F&B MNCs have launched their own initiatives in an effort to address such concerns.
- For example, in April 2014 PepsiCo accepted the Voluntary Guidelines on the Responsible Governance of Tenure or there was recent pledge by Kelloggs, Nestle and others to stop targeting children in advertisements of unhealthy food.

- See, http://www.soschildrensvillages.org.uk/news/charity-blog/will-the-g8-food-security-alliance-benefit-africa2019s-small-farmers.
- See, http://www.fao.org/news/story/en/item/224619/icode/
- See, http://www.smartcompany.com.au/marketing/42505-nestle-coke-and-other-big-brands-say-they-ll-stop-advertising-junk-food-to-kids-by-2018.html#

2015 Trends in Food According to Innova Market Insights

Top five food trends for 2015

1. From clean to clear label
2. Convenience for foodies
3. Marketing to millennials
4. Snacks rise to the occasion
5. Good fats, good carbs

Top five food and beverage trends for 2015
By Nicholas Robinson+, 20-Nov-2014

Clear labelling and convenience are two of the top five trends that will dominate the food and drink industry in 2015, Innova Market Insights has predicted.

http://www.foodmanufacture.co.uk/Supplements/Food-Ingredients-Health-Nutrition/Top-food-trends-for-2015