

## Europe: Patterns of Illicit Drug Use Revealed by the Wastewater Studies of the EMCDDA

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## Wastewater testing results and Illicit Drug use in Europe 2017

Continuous testing of wastewater in participating cities in Europe from 2011 to 2017 for the chemical by-products of the processing of cocaine, amphetamine, methamphetamine and cannabis/ganja by the human body has afforded a picture of the evolution of supply and demand on drug markets. In the EMCDDA reports ganja is not reported given methodological issues of reliably identifying the chemical by-product of the processing of the properties of ganja by the human body and the same applies to heroin. The EMCDDA reports track cocaine, amphetamine, methamphetamine and MDMA. Given the fact that cocaine and methamphetamine/meth are two of the strategic drugs of the Mexican Transnational Trafficking Organisations (MTTOs) the reports from 2011 to 2017 provide insights into the rolling out of the strategy of the MTTOs, its partners and affiliates towards exerting hegemony over the cocaine and meth markets of Europe.

In 2017 56 cities of 19 European countries made up the sample of the study where the urinary biomarkers for the parent drug for amphetamine and methamphetamine and MDMA were sought in wastewater samples taken. And the main urinary metabolites of cocaine (benzoylecgonine/BE) and cannabis (THC-COOH) were sought but the results for cannabis were not presented in the report. The 2017 picture that emerges from 56 European cities is as follows: Cocaine-the BE loads indicate that cocaine consumption is highest in western and southern cities of Europe and very low to negligible in the majority of eastern European cities. The countries with the highest BE loads are: Belgium, The Netherlands, Spain and the United Kingdom. Amphetamine-loads of amphetamine detected were concentrated in the north and east of Europe with much lower levels in cities of the south. Methamphetamine-the loads discovered illustrate the expansion of use from the traditional areas of the Czech Republic and Slovakia to Cyprus, east of Germany and northern Europe especially Finland. The loads in the rest of Europe were very low to negligible.

There were 10 countries (Belgium, Cyprus, Czech Republic, Germany, Finland, France, Netherlands, Portugal, Spain and Slovakia) in the 2017 sample where there were two or more study locations which meant two or more samples were taken. The study indicated an apparent disparity in loads between cities in the

same country for cocaine and MDMA where loads from the larger cities were larger than those of the smaller cities. This was not the case for amphetamine and methamphetamine.

The 2017 report revealed a change in the use of cocaine seen in the BE loads uncovered in the yearly studies from 2011 to 2017. From 2011 to 2015 the yearly studies painted a picture of relative stability with the highest BE loads found in the five-year study period in the same cities and regions of the study. From 2016 the picture changed with 22 out of 33 cities having data for 2015 and 2016 reporting an increase in loads. In 2017 19 out of the 31 cities with data for 2016 and 2017 reported an increase in loads found by the studies. Most of the 13 cities with data for 2011 and 2017 recorded an increasing longer term trend. Whilst the studies showed no major changes in the dominant pattern of use of amphetamine and methamphetamine.

### Comparative Analysis

Cocaine: overall mean: (mg/1000 people/day)

Utilising the wastewater studies from 2011 to 2017 with 2011 viewed as the base year then 2015 and finally 2017 countries from within the top 10 user countries i.e. those with the highest loads of BE which appear in the years 2011, 2015 and 2017 are compared. The 5 countries with the lowest BE loads in 2011 provided they appear in the lists for 2015 and 2017 are also compared. The 10 countries with the lowest BE loads in 2015 where they appear in the 2017 list are also compared.

In 2011 the top 10 cities by BE loads in the order of the magnitude of their BE load were as follows: Antwerp Zuid, Belgium 721.2, Amsterdam, The Netherlands 644.1, Eindhoven The Netherlands 437.4, Barcelona Spain 421.9, London UK 392.7, Castellon Spain 371.6, Utrecht The Netherlands 356.3, Milan Italy 238.9, Santiago Spain 211.3, Paris Seine Centre France 206.3. In the 2015 survey London, Amsterdam, Antwerp Zuid, Eindhoven, Milan, Barcelona, Utrecht, Paris Seine Centre, Santiago, and Castellon are listed with loads of BE as follows: London 909.4, Amsterdam 641.7, Antwerp Zuid 621.7, Barcelona 443.6, Eindhoven 323.0, Milan 206.1, Paris Seine Centre 161.6, Utrecht 148.7, Santiago 135.1 and Castellon 126.6. In a 5-year time frame the BE load has increased in London by 43.18% and in Barcelona by 4.89% in all of the other cities loads have declined in

some the decrease is markedly high especially in the case of Castellon as follows: Amsterdam 0.38%, Antwerp Zuid 16.2%, Eindhoven 26%, Milan 16%, Paris Seine Centre 27.8%, Utrecht 142%, Santiago 56.5% and Castellon 193.6%.

In 2017 for the said list of cities the results are as follows: London no report, Barcelona 965.2 and a 56.3% increase over 2011, Amsterdam 734 and a 12.3% increase over 2011, Antwerp Zuid 822.9 and a 12.4% increase over 2011, Eindhoven 427.8 and a decline of 2.3% from 2011, Milan 341.4 and an increase of 30% over 2011, Paris Seine Center 324.2 and an increase of 36.4% over 2011, Utrecht 288.7 and an increase of 23.5% over 2011, Santiago 342.7 and an increase of 38.4% over 2011 and Castellon 319.5 with a decline of 16.4 % from 2011.

The comparison between the loads for 2015 and 2017 for the list of cities reveals a significant rise in loads for all cities in 2017 for which data was published. These results are as follows: Barcelona a rise of 54%, Amsterdam a rise of 12.6%, Antwerp Zuid a rise of 25%, Eindhoven a rise of 24.5%, Milan a rise of 40%, Paris Seine Centre a rise of 51%, Utrecht a rise of 49%, Santiago a rise of 61% and Castellon a rise of 61%.

What is now apparent is that 2015 was a watershed in the supply side of the cocaine market to the listed cities which by 2017 had exceeded the volume of supply that existed in 2011. In 2015 the cocaine market was squeezed of supply and especially quality supply seen in the precipitous fall in loads identified in wastewater. By 2017 the loads had recovered to levels exceeding 2011 levels but there were declines in Eindhoven and Castellon and a new geography of distribution is noted amongst the list of cities. Amsterdam and Antwerp Zuid are just ticking over at a load increase level in the 12 % range over 2011. Barcelona has exploded as the premier city for load growth in the 50% bracket, with Milan, Paris Seine Centre and Santiago in the 30 percent bracket and Utrecht follows in the 20 percent bracket. From the 2011 list it's then apparent that Spain, Italy and France are targeted prime markets. But this list cannot paint a complete picture given the small sample of the 2011 initial survey and the fact that since 2011 cities are added and fall off from the survey. Other forms and lines of analyses are then necessary.

For the years 2011, 2013, 2015 and 2017 for the top 10 loads per cities the total of these BE loads and their average per year were as follows. The top 10 of 2011

had a total BE loads of 4007.4 for an average of 400.74, for 2013 the total BE loads was 5262.3 with an average of 526.23, for 2015 the total BE loads was 5291.2 with an average of 529.12 and for 2017 the total BE loads was 7380 with an average of 738. The total BE loads between 2011 to 2017 increased by 45.69%. A tsunami of product is now building to wash over the cocaine drug markets of Europe. The top 10 loads per cities for 2011 were as follows in the order of their place in the rank of ten: Antwerp Zuid, Amsterdam, Eindhoven, Barcelona, London, Castellon, Utrecht, Milan, Santiago and Paris Seine Centre. For 2013 the top 10 were: Antwerp Zuid, London, Zurich, Barcelona, Antwerp Deurne, Basel, Eindhoven, Valencia, St Gallen Hofen and Amsterdam. As new cities were added to the list of research sites the order dramatically changed most noteworthy being three cities of Switzerland now entering the top 10 which deepens the supply side landscape and the strategic plan driving supply. For 2015 the top 10 were: London, Amsterdam, Antwerp Zuid, Zurich, Brussels, Antwerp Deurne, Barcelona, Geneva, St Gallen Hofen and Copenhagen. For 2017 they were as follows: Barcelona, Zurich, Antwerp Zuid, St Gallen Hofen, Bristol, Amsterdam, Basel, Berne and Dortmund. The cities of Switzerland from 2013 to 2017 maintained a presence in the top 10 of the study and in 2017 for the first time a city of Germany entered the top 10. Again important insights into the dynamics of the supply side and the strategic plan in operation.

Analysis of the total loads and the hierarchy of the second tier of 10 cities for 2012, 2013, 2015 and 2017 is also instructive on the nature of the cocaine market. The study for 2011 given the limited number of cities does not afford a second tier of 10 cities hence the use of 2012. For 2012 the cities placed 11<sup>th</sup> to 20<sup>th</sup> were as follows: 11<sup>th</sup> Castellon 263, 12<sup>th</sup> Milan 241.7, 13<sup>th</sup> Santiago 240, 14<sup>th</sup> St Gallen Hofen 222.4, 15<sup>th</sup> Paris Seine Centre 215.4, 16<sup>th</sup> Brussels 187.1, 17<sup>th</sup> Oslo 96.4, 18<sup>th</sup> Zagreb 69.2, 19<sup>th</sup> Prague 48.6 and 20<sup>th</sup> Gothenburg 25.3. The total of BE loads for the group was 1609.4 with an average of 160.94. For the top 10 cities of 2012 the total of BE loads was 4,127 with an average of 412.7. There is then a wide disparity in consumption between the top 10 cities and the second tier 10 of 2012 some 61% which points to supply and its limitations. For 2013 the cities placed 11<sup>th</sup> to 20<sup>th</sup> were: 11<sup>th</sup> Geneva 373.4, 12<sup>th</sup> Dortmund 324.1, 13<sup>th</sup> Berne 264.3, 14<sup>th</sup> Paris Seine Centre 242.7, 15<sup>th</sup> Milan 133.1, 16<sup>th</sup> Brussels 223.8, 17<sup>th</sup> Copenhagen 218.6, 18<sup>th</sup> Utrecht 199.2, 19<sup>th</sup> Castellon 174.5 and 20<sup>th</sup> Santiago 130.2 with the

total of BE loads being 2383.9 with an average of 238.89. For 2013 the total of BE loads of the top 10 cities was 5262.3 with an average of 526.23 some 54.69% larger than the figure for the second tier 10 cities. The disparity is diminishing compared to 2012 but the logistics of supply is still inadequate to the task at hand of expanding demand/consumption in the expanse of Europe. For 2015 the second tier of 10 cities are: 11<sup>th</sup> Valencia 336.7, 12<sup>th</sup> Eindhoven 323, 13<sup>th</sup> Lausanne 313.9, 14<sup>th</sup> Bristol 306.3, 15<sup>th</sup> Dortmund 275.4, 16<sup>th</sup> Lisbon 264.3, 17<sup>th</sup> Molina de Segura 232.8, 18<sup>th</sup> Berne 228.9, 19<sup>th</sup> Lugano 228.5 and 20<sup>th</sup> Milan 206.1 with total loads being 2716 with an average of 271.6. In 2015 the total of BE loads of the top 10 cities was 5291.2 with an average of 529.12 some 48.66% larger than the figure for the second ten cities. The gap has again diminished but its extent reveals the gravity of the supply problem. In 2017 the results were as follows: 11<sup>th</sup> Ljubljana 449.8, 12<sup>th</sup> Reykjavik Klettagaroar 437.3, 13<sup>th</sup> Frankfurt 427.9, 14<sup>th</sup> Eindhoven 427.8, 15<sup>th</sup> Boom 426.8, 16<sup>th</sup> Valencia 425.8, 17<sup>th</sup> Fort-de-France 399, 18<sup>th</sup> Hamburg 392.8, 19<sup>th</sup> Brussels 373.8 and 20<sup>th</sup> Santiago 342.7 with the total of BE loads being 4103.7 with an average of 410.37. In 2017 the total of BE loads of the top 10 cities was 7380 with an average of 738 some 44.49% larger than the total loads for the second 10 cities. The total loads of the second ten cities have risen from 2012 to 2017 by 60.78% which illustrates the level of investment being poured into the cocaine market by transnational organised crime. The disparity in supply has diminished from the 60 percentile in 2012 to the 40 percentile in 2017 but the gap is still too large necessitating further investment and action to increase supply at the street level over a broader geographic area.

An analysis of the loads for the top 20 cities with emphasis on their countries of location for 2013, 2015 and 2017 enables the geography of supply to emerge and the hierarchy of this supply scenario. For 2013 the hierarchy of countries that emerge based on the total loads of cities within these countries is as follows: 1<sup>st</sup> Switzerland, 2<sup>nd</sup> Belgium, 3<sup>rd</sup> Spain, 4<sup>th</sup> Netherlands, 5<sup>th</sup> UK, 6<sup>th</sup> Germany, 7<sup>th</sup> France, 8<sup>th</sup> Italy and 9<sup>th</sup> Denmark. By average loads per country the hierarchy for 2013 was as follows: 1<sup>st</sup> UK, 2<sup>nd</sup> Belgium, 3<sup>rd</sup> Switzerland, 4<sup>th</sup> Germany, 5<sup>th</sup> Spain, 6<sup>th</sup> Netherlands, 7<sup>th</sup> France, 8<sup>th</sup> Italy and 9<sup>th</sup> Denmark. For 2015 the hierarchy by loads was: 1<sup>st</sup> Switzerland, 2<sup>nd</sup> Belgium, 3<sup>rd</sup> UK, 4<sup>th</sup> Spain, 5<sup>th</sup> Netherlands, 6<sup>th</sup> Denmark, 7<sup>th</sup> Germany and 8<sup>th</sup> Portugal. By average loads per country the hierarchy was: 1<sup>st</sup> UK, 2<sup>nd</sup> Belgium, 3<sup>rd</sup> Netherlands, 4<sup>th</sup> Switzerland, 5<sup>th</sup> Spain, 6<sup>th</sup>

Denmark, 7<sup>th</sup> Germany and 8<sup>th</sup> Portugal. For 2017 the hierarchy by loads was: 1<sup>st</sup> Switzerland, 2<sup>nd</sup> Spain, 3<sup>rd</sup> Belgium, 4<sup>th</sup> Germany, 5<sup>th</sup> Netherlands, 6<sup>th</sup> UK, 7<sup>th</sup> Slovenia, 8<sup>th</sup> Iceland and 9<sup>th</sup> France. The hierarchy by average loads was: 1<sup>st</sup> UK, 2<sup>nd</sup> Switzerland, 3<sup>rd</sup> Netherlands, 4<sup>th</sup> Spain, 5<sup>th</sup> Belgium, 6<sup>th</sup> Slovenia, 7<sup>th</sup> Germany, 8<sup>th</sup> Iceland and 9<sup>th</sup> France. For 2017 the city of Fort-de-France was the city that placed France in the hierarchy but this city is the primary urban centre of Martinique a French overseas territory in the Caribbean island chain. There are then core countries that dominate the cocaine landscape of Europe namely Switzerland, the UK, Spain, Belgium and the Netherlands with Germany now set to join this core group to form **the cocaine group of six in Europe**. The supply of cocaine to this group of six is constant seen in the loads which supply the two or three countries that complete the list of top 20 cities by loads as they fluctuate by year. With German cocaine markets secured attention will turn to surrounding markets. The cocaine markets of Italy especially Naples must now be studied as is the case with France and the UK as these markets will be now fully exploited through expansion of the supply of cocaine to previously underserved and bypassed markets.

In 2011 the bottom 5 countries were Oslo, Norway 52.6, Zagreb, Croatia 50.0, Stockholm Henriksdal, Sweden 48.8, Budweis, Czech Republic 6.9 and Umea, Sweden 2.6. In 2013 the result for Oslo was 69.9, 80 for Zagreb, 2.6 for Budweis, 5.8 for Umea and no result for Stockholm Henriksdal. In 2015 Oslo recorded 151.5, Zagreb 100.5, Budweis 5.5 and there were no results for Stockholm Henriksdal and Umea in both 2015 and 2017. In 2017 Oslo recorded 92.6, Zagreb 216.3 and Budweis 12.5. In 2013 Oslo recorded a 69.9% increase on 2011, in 2015 a 62.28% increase on 2011 and a 43.19% increase in 2017 on 2011. The momentum therefore fell in the Oslo cocaine drug market after its peak in 2015. An entirely different reality is apparent in Zagreb where in 2013 the increase was 37.7% over 2011, whilst in 2015 it was a 50.24% increase over 2011 and in 2017 the increase was 76.68% over 2011. There is then a growing supply of product to the Zagreb market which is driving consumption. Whereas for Budweis growth in consumption is spotty with an increase of 62.31% in 2013 over 2011, a decline of 20.28% in 2015 compared to 2011 and an increase of 44.8% in 2017 over 2011. The supply side dynamic is very much different from Zagreb. The broad outline of a supply side dynamic and the strategy driving it for Europe is then becoming

clearer. The noted growth in loads for Zagreb illustrate the operational presence of pipelines through Croatia. The final area of analysis will be the realities of Switzerland and Germany.

### Switzerland

In 2012 five cities of Switzerland were listed for the first time and have maintained their presence in the yearly studies to 2017. These are Geneva, Zurich, Basel, Berne and St. Gallen Hofen. In 2012 the sum of their loads of BE were 1274.8 with an average of 254.96 whilst in 2015 the sum of the loads was 1671.1 with an average of 334.22 and in 2017 the sum was 3647.6 with an average of 729.52. For the year 2012 compared to 2017 the loads of these five cities increased by 65%. The hierarchy of BE loads for these cities based on the sum of 2012, 2015 and 2017 as per city is as follows: Zurich 1900.6, Geneva 1578.7, St. Gallen Hofen 1470.9, Berne 1022.2 and Basel 886.6. The increase in the loads of 2017 over those of 2012 for the five cities were as follows: Zurich 53.24%, Geneva 57%, St Gallen Hofen 73.96%, Berne 49.69% and Basel 50%. It is then apparent that in 2017 a wave of product has swept over the five cities of Switzerland in the yearly wastewater study for BE. From the list of cities presented in 2017 it is readily apparent that Switzerland is the premier cocaine drug market in the central quadrant of Europe and for the whole of Europe as presented in the study of wastewater. The rate of growth of the loads of BE from 2012 to 2017 placing specific cities of Switzerland in the top 10 cities of the studies from 2012 to 2017 potently indicate the existence of supply pipelines purposefully established to create and supply the Swiss cocaine drug markets. These pipelines run from the initial entry points of Spain, Belgium, The Netherlands and now France and Italy. In addition, the geographic location of Switzerland and the infrastructure supported by its cocaine drug markets have resulted in the use of this country as a trafficking transition zone to Germany, Austria etc.

### Germany

The key to unlocking this new development is the load picture from German cities. In 2013 three German cities entered the study for the first time namely Dortmund, Dulmen and Dresden, in 2015 two more were added Berlin and Munich Gut\_Grosslappen for a total of five. In 2017 16 German cities were part of the study which meant that eleven new cities were added in 2017 as follows:



Frankfurt, Hamburg, Hannover, Stuttgart, Saarbrücken, Magdeburg, Rostock, Mainz, Erfurt, Chemnitz and Nuremberg. The total loads for these German cities in 2017 was 3022.1 with an average of 188.88. Based on the results for the sixteen cities it is apparent that the prime markets are in the following order: Dortmund, Frankfurt, Hamburg and Hannover. Berlin is a market in transition as it vies to become a first tier market being the largest second tier market. The targeted secondary markets in need of development are: Stuttgart, Munich Gut\_Grosslappen, Magdeburg, Rostock and Mainz. The German market is young and in development seen in the total loads for sixteen German cities in 2017 being 3022.1 with an average of 188.88 compared to the total loads and the average loads for Switzerland in 2017 but it's a market under assault as its of signal importance in the strategic move to now expand the cocaine markets of central Europe and in the largest economy of the EU. Expanding the cocaine market of Germany is then of signal importance which is vital to unleashing the tsunami of product to wash over the cocaine markets of Europe. Special attention must now be placed on Hamburg as its loads were eclipsed only by Dortmund and Frankfurt in that order in 2017 as it evolves into a premier import/distribution point and a consumption zone where demand will be driven by supply. The Ndrangheta given its operational presence in Germany has the responsibility within the organisational structure of the trafficking omnibus of the MTTOs to expand the cocaine markets of Germany into a tier one cocaine market. The primary question that arises from this reality is the involvement of the Ndrangheta in Germany in the meth and amphetamine markets of Germany?

#### The Trafficking Reality.

The fall in loads in 2015 and the precipitous rise in 2017 was as a result of developments on the supply side of the market. The fall was not widespread as specific cities, targeted cities experienced a rise in loads whilst others fell dramatically. This was the visible effect of a handover on the ground where the hegemony of the MTTOs, its partners especially the Ndrangheta and affiliates in Europe simply shut off supply to those outside of the umbrella transnational organised crime group and pumped increased loads into those operations of its umbrella organisation. By 2017 the surrender of the old order was now visible and the expansion of the new order moving a level of supply to markets never seen before in Europe. Central to this new order is Italian organised crime

especially the Ndrangheta illustrated by their lead in expanding German cocaine markets and the Camorra. This new order has now diverse entry points to Europe as the old entry points of Spain, Belgium and The Netherlands no longer satisfy the imperative to expand markets in central and eastern Europe. Hamburg in Germany, ports of Italy, Bulgaria, Greece, Albania, Montenegro Croatia, Slovenia and Turkey are all in play. The quest is to create and expand markets in central and eastern Europe in that order.

Methamphetamine: overall mean: (mg/1000 people/day)

The loads uncovered for methamphetamine/meth from 2011 to 2017 are low compared to cocaine. For 2011 the total load for the eight top cities was 503.3 with an average of 62.91. In 2013 the total for the top 10 cities was 1146.1 with an average of 114.61 whilst in 2015 the total for top 10 cities was 925.3 with an average of 92.53. For 2017 the total of the top 10 cities was 1527.6 with an average of 152.76. As in the case of cocaine loads meth loads declined in 2015 from 2013 a decline of 19.28% and rebounded in 2017 with an increase of 39.42%. The top tier cities have changed over the years with the most noteworthy change appearing in 2017 with the listing of the following cities of Germany in the top 10. These are: Chemnitz 1<sup>st</sup>, Erfurt 2<sup>nd</sup>, Dresden 5<sup>th</sup>, Nuremburg 7<sup>th</sup> and Magdeburg 10<sup>th</sup>. For the years 2011, 2013, 2015 and 2017 the rise and fall of the number 1 city of the studies is noted. In 2011 Oslo 244.8 was number 1, in 2013 Prague 326.6 was number 1 whilst in 2015 Oslo 172.4 was number 1 and in 2017 Chemnitz 240.6 was number 1. In 2013 Oslo 107.9 was number 6 and in 2017 Oslo 92.5 was number 8. In 2015 and 2017 Prague was not included in the list of cities of the studies. The most consistent performer in the top tier cities is Budweis as it was second (175.5) in 2011, second (215.3) in 2013, second (161.2) in 2015 and third (200.2) in 2017.

The geographic distribution of consumption based on the countries of the top 20 cities for 2013, 2015 and 2017 placed in a hierarchical order based on total loads per country and average loads per country presents an idea of the evolution of consumption and supply. For 2017 the hierarchy of countries by total loads was as follows: 1<sup>st</sup> Germany, 2<sup>nd</sup> Czech Republic, 3<sup>rd</sup> Slovakia, 4<sup>th</sup> Cyprus, 5<sup>th</sup> Switzerland, 6<sup>th</sup> Finland, 7<sup>th</sup> Norway, 8<sup>th</sup> Spain and 9<sup>th</sup> Lithuania. For 2017 the hierarchy by

average loads was as follows: 1<sup>st</sup> Czech Republic, 2<sup>nd</sup> Germany, 3<sup>rd</sup> Slovakia, 4<sup>th</sup> Norway, 5<sup>th</sup> Cyprus, 6<sup>th</sup> Spain, 7<sup>th</sup> Switzerland, 8<sup>th</sup> Lithuania and 9<sup>th</sup> Finland.

In 2015 the hierarchy by total loads was as follows: 1<sup>st</sup> Slovakia, 2<sup>nd</sup> Norway, 3<sup>rd</sup> Germany, 4<sup>th</sup> Czech Republic, 5<sup>th</sup> Switzerland, 6<sup>th</sup> Cyprus, 7<sup>th</sup> Spain, 8<sup>th</sup> Belgium, 9<sup>th</sup> Iceland, 10<sup>th</sup> Denmark, 11<sup>th</sup> Finland, 12<sup>th</sup> Italy and 13<sup>th</sup> Netherlands. The hierarchy by average loads was as follows: 1<sup>st</sup> Norway, 2<sup>nd</sup> Czech Republic, 3<sup>rd</sup> Slovakia, 4<sup>th</sup> Germany, 5<sup>th</sup> Spain, 6<sup>th</sup> Switzerland, 7<sup>th</sup> Cyprus, 8<sup>th</sup> Iceland, 9<sup>th</sup> Denmark, 10<sup>th</sup> Belgium, 11<sup>th</sup> Finland, 12<sup>th</sup> Italy and 13<sup>th</sup> Netherlands.

For 2013 the hierarchy by total loads was as follows: 1<sup>st</sup> Czech Republic, 2<sup>nd</sup> Slovakia, 3<sup>rd</sup> Germany, 4<sup>th</sup> Norway, 5<sup>th</sup> Switzerland, 6<sup>th</sup> Spain, 7<sup>th</sup> Belgium, 8<sup>th</sup> Denmark, 9<sup>th</sup> UK, 10<sup>th</sup> Italy, 11<sup>th</sup> Netherlands 12<sup>th</sup> Greece, 13<sup>th</sup> France and 14<sup>th</sup> Cyprus. The hierarchy by average loads was as follows: 1<sup>st</sup> Czech Republic, 2<sup>nd</sup> Slovakia, 3<sup>rd</sup> Germany, 4<sup>th</sup> Norway, 5<sup>th</sup> Spain, 6<sup>th</sup> Switzerland, 7<sup>th</sup> Denmark, 8<sup>th</sup> UK, 9<sup>th</sup> Belgium, 10<sup>th</sup> Italy, 11<sup>th</sup> Netherlands, 12<sup>th</sup> Greece, 13<sup>th</sup> France and 14<sup>th</sup> Cyprus.

When the geography of consumption of 2013 is compared to 2017 the top 20 cities have shrunk from being located in 14 European countries in 2013 to nine in 2017. In 2013 as in 2017 Germany is a top five consuming country and new consuming countries have appeared from 2013 to 2017 as Cyprus and Finland. Switzerland indicates the greatest potential to be the dominant cocaine and meth market of Europe whilst Germany is being groomed for this reality also but unlike Switzerland both the level of demand of cocaine and meth markets must expand exponentially. The Czech Republic and Slovenia maintain their top billing for meth loads. In 2015 as the loads fell in the top 20 cities the number of countries the top 20 were located fell to 13 compared to the 14 of 2013 indicating consolidation married to a decline in loads. The central question in 2018 and thereafter is then supply as the loads compared to cocaine are very low.

There are then grave supply side problems to maintain the demand momentum which indicates that industrial production of meth especially of the variety employed by the MTTOs is yet to impact the demand side of drug markets. But the 2017 inclusion of German cities in the top 10 for the first time indicates that there is an increase in production that has targeted German drug markets which has changed the geographic supply dynamic. Which raises again the question of supply, its geographic location and the type and scale of production facilities. Is

production still in the mode of the single meth cook producing/cooking limited batches of meth before moving on given the toxicity of the waste produced and the need to secure the product. The other potent question is the precursor utilised, its source of supply, cost and availability.

What is clearly apparent in the studies is the segmented strategy applied to the meth drug market of Europe. In the western and central cocaine markets meth is being offered for sale seen in the loads uncovered in the wastewater studies. In 2013 this is seen in the fact that Barcelona, Zurich, Berne and Basel were in the top 10 cities. In 2015 Basel, Barcelona and Zurich were in the top 10 cities but in 2017 they all fell out of the top 10 displaced by the German cities. In the top tier cities of the west and central Europe the market therefore exists that facilitates the business model of the MTTOs that markets meth and cocaine to different segments of a given drug market. The issue of production has to be solved in order to fully develop and exploit the meth market of these zones. Precursor supply fed into industrial meth production facilities producing industrial grade meth noted for its high quality and lower price is the ideal sought. The decision has then to be made to locate facilities in Europe and offshore as in Africa for export to Europe. Such meth production facilities already exist in West Africa under the control of an affiliate of the MTTOs Nigerian organised crime.

The German reality revealed in the 2017 study indicates a strategy of developing two markets simultaneously the cocaine and meth markets. At present different geographic areas of Germany are the dominant spheres of activity for both drugs but with market success both markets will combine over the terrain of Germany. Disparate organised crime groupings involved in both markets concentrating on different geographic areas will be merged by consent or by force or both.

The next market of interest in the studies is that of Finland for meth. In 2015 the following cities of Finland with their loads were ranked as follows: Turku (11.5) 14<sup>th</sup>, Helsinki (5) 22<sup>nd</sup>, Espoo (4.50) 23<sup>rd</sup> and Tampere (3.5) 26<sup>th</sup>. In 2017 the picture was as follows: Helsinki (40.2) 14<sup>th</sup>, Espoo (40.2) 16<sup>th</sup>, Tampere (24.9) 20<sup>th</sup>, and Turku (17.6) 23<sup>rd</sup>. The loads in 2017 increased and in all cases except Turku these cities rose in the rankings. Why the investment in Finland and the under investment in Oslo, Norway? The supply side dynamic for Germany, the Czech Republic, Finland, Norway and Slovakia continues to be rooted in non-industrial

scale production units run by a cook putting out comparatively small runs of meth of varying quality always on the move. This method of production has to embrace a swarm of meth labs to push out the production levels on a sustainable basis necessary to create the level of demand that is the basis of sustainable wealth generation. Or industrial meth production both in Europe and offshore imported into Europe. Are meth street sales in the west and central top tier cocaine consumption cities and others now based on a mixed source supply both the product of small cooking labs and industrial production imported from offshore production industrial meth factories as in Nigeria and Ghana? This question must be considered in the case of the meth market of Cyprus.

In 2013 the cities of Limassol and Nicosia of Cyprus were included in the survey of cities for meth. In 2013 the load for Limassol was 3.5 with a rank of 20<sup>th</sup> in the list of cities and 1.5 for Nicosia with a rank of 22<sup>nd</sup>. In 2015 Limassol had risen in the placings at 8<sup>th</sup> with a load of 32.3 and Nicosia at 15<sup>th</sup> with a load of 10.5. In 2017 Limassol fell to 9<sup>th</sup> but the load had risen to 88 whilst Nicosia maintained its 15<sup>th</sup> position but its load had risen to 43.8. What then is the source of the meth on Cyprus? Is it supplied by a small cook lab or labs or by imported industrial grade meth crossing the Mediterranean Sea from offshore industrial meth labs on its way to Europe, or both? This will only become clearer with police seizures of meth and the laboratory analyses of these seizures. From the wastewater analyses for 2013, 2015 and 2016 the loads of BE have steadily increased in both cities. In Limassol from 13.9 in 2013 to 78.9 in 2015 and 153.5 in 2016 and in Nicosia from 6.1 in 2013 to 61.1 in 2015 and 81.5 in 2016. There were no reports for 2011, 2012, 2014 and 2017. In both cities there is the marketing of cocaine and meth which must be placed in the geographic context of Cyprus specifically the sea ports of Limassol and its surrounding area and the trafficking pipelines spanning the Mediterranean Sea to and from Europe. Limassol is then the Cyprian variant of the model of using ports of Europe as importation, distribution and consumption points for imported illicit drugs.

The fall in loads of meth in 2015 and the explosion of meth loads thereafter especially in 2017 as is the case with cocaine has to be grappled with. If the market realities of cocaine didn't apply to meth in Europe, why then the simultaneous fall in loads? The production and supply realities of both drugs are vastly different why then the simultaneous drop in loads and the subsequent

explosion of loads? Apparently the impact of the MTTOs, their partners as the Ndrangheta and the Camorra and their affiliates as Polish and Albanian organised crime on the meth markets of Europe has not been recognised, accepted and analysed. Any involvement of the MTTOs and their organised crime omnibus in the meth markets of Europe especially those in countries of Europe where they are making significant investment in cocaine markets will lead to hegemony over meth markets.

A simple indicator of the dynamics of the supply side of the meth market to Germany is the news report of the Mexican woman interdicted at Frankfurt airport with over 10 kilos of crystal meth in her luggage upon her arrival on a flight from Mexico. The activation of mules and swallows of crystal meth transporting via air connections to Germany indicates that the full court press for Germany is now in play and all smuggling methods are being utilised especially containerised cargo by the MTTOs, their partners and affiliates.

<http://www.dw.com/en/mexican-woman-caught-at-frankfurt-airport-with-10-kilos-of-crystal-meth/a-43247399>

Amphetamine overall mean (mg/1000 people/day)

The loads of amphetamine in the list of cities studied complete the picture of the reality of drug markets involving a competitor product to cocaine and methamphetamine. The loads of amphetamine for the top 10 cities for 2011, 2013, 2015 and 2017 are below that for cocaine and they are not markedly dominant over those of methamphetamine. For amphetamine the total load for 2011 for the top 10 cities was 682.3 with an average of 68.23, for 2013 the total load was 1078.6 with an average of 107.86, for 2015 the total load was 1514.2 with an average of 151.42 and for 2017 the total load was 2072.1 with an average of 207.21. The averages per year for cocaine were: 2011:400.74, 2013:526.23, 2015:529.12 and 2017:738. There is then investment in cocaine supply and sales to the drug markets of the top 10 cities for the years chosen that eclipses the production, sales and supply of amphetamine to drug markets of the top 10 cities for the years chosen. Investment in cocaine that indicates the involvement of transnational organised crime from a position of hegemony in cocaine drug markets. The difference in loads in the drug markets of the top 10 cities for amphetamine and methamphetamine for the years 2011, 2013, 2015 and 2017

indicate that the level of investment in meth production and supply meth loads in the top 10 cities will soon catch up and surpass amphetamine loads provided there is no stepping up of investment in amphetamine production and supply. In 2011 the load average of the top 10 cities of amphetamine was 68.23 compared to 62.91 for meth. In 2013 it was 107.86 for amphetamine and 114.61 for meth. In 2015 it was 151.42 for amphetamine and 92.53 for meth and in 2017 it was 207.21 and 152.76 for meth. There was no decline in loads for amphetamine in the period as the dramatic decline for meth loads in 2015. The reality that impacted cocaine and meth supplies to drug markets made no impact on amphetamine loads which indicates that the operational mode of amphetamine production and supply is separate and apart from cocaine and meth. A listing of the top 10 cities with the highest loads of amphetamine for 2011, 2013, 2015 and 2017 reveals a geography of consumption that is at variance with meth. There are cities within the top 10 cities located in the western quadrant of high cocaine loads and there are cities from the central quadrant especially from 2015 which further evolved in 2017 which are growing cocaine consumption zones, whilst others are not but they are not high load cities for meth. In this quadrant cities of Germany are numerically dominant. Germany is then faced with a poly drug supply impacting its cities supplied by a range of organised and transnational organised crime groups.

The geography of consumption and by extension supply is potently illustrated by the countries of location of the top 20 cities for 2017 and 2015. In 2017 the top 20 cities were located in six countries namely The Netherlands, Belgium, Germany, Iceland, Finland and Norway. The hierarchy of countries by total loads for each was as follows: 1<sup>st</sup> Germany, 2<sup>nd</sup> Belgium, 3<sup>rd</sup> The Netherlands, 4<sup>th</sup> Iceland, 5<sup>th</sup> Finland and 6<sup>th</sup> Norway. The hierarchy of countries by average loads was as follows: 1<sup>st</sup> Belgium, 2<sup>nd</sup> Iceland, 3<sup>rd</sup> The Netherlands, 4<sup>th</sup> Germany, 5<sup>th</sup> Finland and 6<sup>th</sup> Norway. The total loads for the 2017 top 20 cities were 2906.3 with an average of 145.31. The amphetamine market for the top 20 cities coincides with the prime cocaine markets of Belgium and the Netherlands and in the growing market of Germany whilst the loads are comparatively low indicating that the supply side is in need of investment. For 2015 the top 20 cities were located in Belgium, Norway, Germany, Finland, UK, Croatia, Iceland, Switzerland and The Netherlands a total of nine countries which was reduced to six in 2017. In the 2015 the

hierarchy of countries by total loads was: 1<sup>st</sup> Belgium, 2<sup>nd</sup> Germany, 3<sup>rd</sup> Finland, 4<sup>th</sup> Norway, 5<sup>th</sup> UK, 6<sup>th</sup> Croatia, 7<sup>th</sup> Iceland, 8<sup>th</sup> The Netherlands and 9<sup>th</sup> Switzerland. The hierarchy of countries by average loads was: 1<sup>st</sup> Belgium, 2<sup>nd</sup> Norway, 3<sup>rd</sup> Germany, 4<sup>th</sup> Finland, 5<sup>th</sup> UK, 6<sup>th</sup> Croatia, 7<sup>th</sup> Iceland, 8<sup>th</sup> The Netherlands and 9<sup>th</sup> Switzerland. Total loads for 2015 for the top 20 cities were 2141.2 and the average loads was 107.06.

From the snapshot of demand offered by the wastewater studies it must then be expected that the MTTOs, their partners and affiliates will move to dominate (if they have not done so already) amphetamine production and supply given its different geography of demand. A move very similar to what has been accomplished with the supply of marijuana/ganja and hashish through the affiliation of Moroccan, Albanian and Jamaican organised crime groups. Clearly, investment in amphetamine production and supply is as at 2017 inadequate to the task of exploding demand to the sustainable level to realise profit maximisation and wealth generation. This strategically necessary investment with the accompanying infrastructure and operational resources can be best supplied by transnational organised crime already involved in the drug markets of Europe namely the MTTOs, the Ndrangheta, the Camorra and the affiliates. The question is if transnational organised crime groups see the amphetamine trade in Europe as a desirable and worthwhile venture?

### The Reality Revealed

The wastewater studies have confirmed that the drug markets of Europe are supplied by a poly-drug mix with cocaine being the illicit drug presenting the largest loads in the wastewater tested. Transnational organised crime specifically the MTTOs, its partners and affiliates are investing heavily in expanding and deepening the cocaine markets of Europe. A news report from Sweden dated 24 March 2018 provides one instance of this poly-drug mix in the seizures of drugs by Swedish Customs in 2018 entering Sweden. The Oresund bridge, Malmo and via the ferries from Denmark at Helsingborg are the major gateways according to the news report. From the start of 2018 Customs of the counties of Skane, Blekinge and Kalmar of the South Region made 973 seizures of illicit drugs comprising 973 kilos of cannabis, 330 kilos of cocaine, 140 kilos of amphetamine and 40 kilos of heroin. This then is an expression of the expanse of illicit drugs that demand exists



for on Swedish drug markets that beckons to the MTTOs, their partners and affiliates to work towards exerting hegemony over.

<http://kuriren.nu/nyheter/rekordmanga-narkotikasmugglare-haktade-nm4795712.aspx>

Market expansion has now targeted Germany and it's expected that the process is underway in Poland given the affiliate status of Polish organised crime with the MTTOs. Italy is an expanding trafficking entry/import point which is feeding the transition zone comprising Austria, Czech Republic and Slovakia which supplies Germany and Poland. There are also the pipelines from the western quadrant, import points in Germany as Hamburg and in Poland, the trans Adriatic pipeline, the pipeline from the Black Sea specifically with landings in Romania and the trans Balkans route. The trafficking infrastructure is presently in place and functional what is lagging behind is the rolling out on the ground level of personnel and organisational structure necessary to supply the volume of product to drug markets that will explode demand. In this process partners and affiliates utilise their own personnel and fill manpower needs by recruiting affiliates from European organised crime and gangland. This process dramatically changes organised crime and gangland on the ground which impact the contested spaces of the social order, the banlieues, through the creation of an alternate social order.

The maxim of the illicit drug trade: supply begets demand holds true in Europe and in response the gaps in the listing of cities of the wastewater studies in relation to the supply infrastructure must be addressed. These gaps are apparent in Italy and Poland and must be addressed given the strategic importance of both countries to the agenda of transnational organised crime. Gaps are also apparent in the cities through which the various pipelines of the east and south run. It must be appreciated that a period of lag or the need to catch up between the volume of targeted cities and non-targeted transition cities. There is also a lag time between the placing of volume on the streets and the subsequent rise in consumption and its impact on loads. There is then a tsunami of supply and a tsunami of demand which must be joined at the hips for profit maximisation and therein lies the grave logistical challenge plaguing organised crime managers on the ground.

<http://www.emcdda.europa.eu/topics/pods/waste-water-analysis>