FRESHER NEWSLETTER

MARCH 2016: SECOND ISSUE

Editorial by **Professor Jean-Paul MOATTI**,
Aix-Marseille University & French National Institute for Development Research (IRD)

Read the full article THE FRESHER PROJECT: **IN THE EYE OF THE CYCLONES** *page 7-9*

The Fresher Consortium, that I have the honour to coordinate, pursues four major goals. Firstly, its aim is to produce quantitative estimates of the future global burden of chronic non communicable diseases (NCDs) in the EU and its potential impact on health care expenditures and delivery, on population global health and well-being, and on health inequalities as well as socio-economic inequalities as a whole.

Secondly, while basing its estimates not just on extrapolation of observed past health trends but also on foresight techniques, FRESHER aims to bridge the gap between two quite diverse scientific communities: the foresight researchers on the one hand, and on the other hand the public health research community.

Thirdly, although FRESHER is based on academic excellence of both its partners and its methodology, it is carried out in an operational spirit, in order to illustrate options for containing the burden of NCDs according to alternative (health and non-health) policy choices.

For accomplishing these three goals, a fourth one is a necessary prerequisite: that beyond the consortium partners, the whole project is an interactive process with key stakeholders in public health and European policies.

The first year of FRESHER activities has occurred in the difficult context of an economically and geopolitically “annus horribilis” for the EU. Fortunately, though, 2015 also offered some reasons for hope on many fronts, with important signals coming from the UN, the WHO, the COP 21.

Although the FRESHER project was not built to respond or seize opportunities given by global and European contexts, its original methodology allows us to effectively take these challenges into account and provide some evidence-based innovative ideas for European decision-makers in all sectors affecting public health.

An exciting perspective for the work of the FRESHER Consortium in 2016.

FRESHER SCENARIOS AND WEB-DOCUMENTARIES

Workshop in Brussels - capture from the FRESHER video ©EPHA

FRESHER Scenarios will be a medium - long term vision aimed at policy-makers for planning future policy actions, delineating policy alternatives and new policy combinations.
Building FRESHER Scenarios is a systematic and creative process that engages stakeholders in the first step of the foresight exercise called "**Horizon Scanning**". The Horizon Scanning aims at the identification of the NCDs related short, medium and long term trends and drivers. To complement the literature review on well-researched risk factors, three regional workshops (Vienna, Brussels, and Lisbon) were organized to elicit stakeholder's credible observations about possible changes, wider correlations and potential indications of new emerging issues. At the end of 2015, the results of these consultations were included in the FRESHER report "Horizon Scanning" that will be delivered to EU stakeholders, circulated among all participants and discussed in the FRESHER High Policy Event.

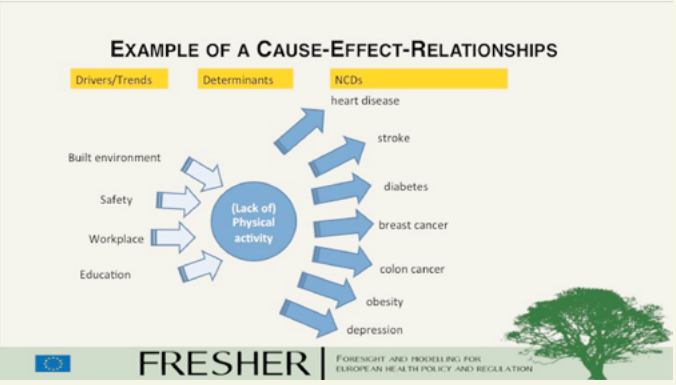
As communications leader in the FRESHER project, Partner EPHA has produced a video that summarizes the above process.

WATCH THE VIDEO

FRESHER SCENARIOS AND WEB-DOCUMENTARY

The subsequent step in the FRESHER project will aim at ranking the emerged list of drivers on the basis of their importance and uncertainty and at creating the Scenarios space. The ranking will be discussed in the FRESHER consortium meetings and submitted to stakeholders' opinions through two rounds of DELPHI like surveys in which you all stakeholders will be invited to take part (February–June 2016). The outline of the FRESHER scenarios will be then agreed with the FRESHER Consortium and further developed by partners ISIS and AIT.

The Scenarios will be finally refined and consolidated in dialogue with the modelling work and microsimulation model developed by partners AMU and the OECD. The FRESHER project will complement its foresight driven approach by the data-driven approach. It will allow, as much as possible, for integrating in quantitative modelling the contribution of qualitative foresight scenario building, including identification of wild cards and weak signals. Therefore, it will provide an innovative approach to combining Foresight approaches with Microsimulation modelling.
The consolidated FRESHER Scenarios will be finalized by December 2017.



Captures from the FRESHER video - ©EPHA

FIRST FRESHER POLICY EVENT

The first FRESHER Policy Event, jointly organized by partners ISS and EPHA, was held in Rome in December 2015.

Paolo Parente (ISS) and Masha Smirnova (EPHA)

This first Policy Event aimed at reviewing current policy actions against the known determinants, contribute to an impact evaluation of current policies and brainstorm on future policy options addressing health and non-health trends and drivers.

One of the main activities of the ISS led WP6 in strict collaboration with EPHA and WP7, is the building of a participatory European policy dialogue, with the involvement of different stakeholders, aiming at producing a common European strategy to tackle the future burden of NCDs, while overcoming some of the already existing limitations of current policies in terms of: geographic scope (as policies are not always adapted to the cultural and socio-economic differences between European regions, countries and within countries); temporal scope (because they often account for a short term horizon only); consideration of the emerging trends, both scientific and societal; and the current lack of an intersectoral approach. The policy dialogue will consider all areas of policy intervention, and will analyze the combinatorial effect of implementing them simultaneously including the potential for positive and negative synergies.

Matteo Dembech (WHO)

FIRST FRESHER POLICY EVENT

Stefano Vella and ISS President Walter Ricciardi

The expert presentations touched upon different areas, from drivers and social determinants (Aaron Reeves, University of Oxford, UK) to prevention, community care and NCDs in Central and Eastern Europe (Dina Balabanova, LSHTM, and Taavi Lai, FVC, Estonia). Alberto Alemanno (HEC Paris, FR), delivered an in-depth presentation on the regulation of NCD risk factors and policy options in regard to trade and marketing of food, alcohol and tobacco. Johan Hansen from Nivel (NL) addressed the evolving role of health systems in tackling NCDs. The event further benefited from a contribution by Matteo Dembech from the WHO, who raised the issue of migrants' susceptibility to a range NCDs and required policy responses. Further presentations addressed the impact of health economics and value in healthcare (John Yfantopoulos, UOA, GR and Antonino Cartabellotta, GIMBE, IT) as well as the impact of predictive analytics and big data (Lorenzo Mantovani, UNIMI, IT). Finally, the CHRODIS Joint Action was presented by its coordinator Carlos Segovia (ISCIII, ES), followed by Alexander Haarman (BZgA, DE) who introduced key good practice examples of tackling NCDs in Member States through primary care and prevention.

This first stimulating policy meeting highlighted the need for policies that act beyond the usual targets (alcohol, tobacco, sugar...) and address all overarching trends and drivers leading to risk factors of NCDs. The next High Policy Event will take place in Brussels and aim at discussing concrete policy options based on the preliminary results of the FRESHER scenarios.

THE FRESHER PROJECT: IN THE EYE OF THE CYCLONES - 1/3

*Article by Professor **Jean-Paul MOATTI**, Aix-Marseille University & French National Institute for Development Research (IRD)*

The Fresher consortium, that I have the honour to coordinate, pursues four major goals. Firstly, its aim is to produce quantitative estimates of the future (Horizon 2025 and 2050) global burden of chronic non communicable diseases (NCDs) in the EU (Northern, Central-Eastern and Southern "Regions") and its potential impact on health care expenditures and delivery, on population global health and well-being, and on health inequalities as well as socio-economic inequalities as a whole.

Prof. Jean-Paul Moatti, Stefano Vella and Andrea Ricci

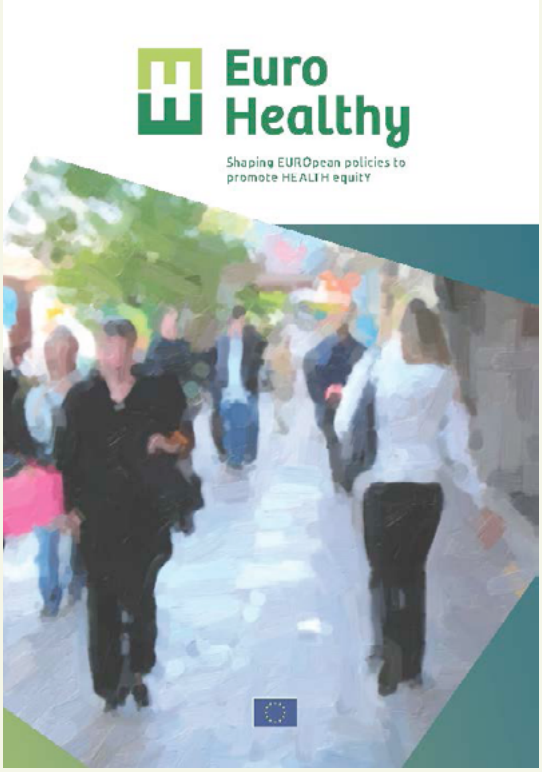
Secondly, one of its main added value to the preexisting research on these topics is to base such estimates not only on extrapolation of observed past health trends but also on foresight techniques. Therefore, the project, and the partners which have been motivated to work together in the consortium, tries to bridge the gap between two quite diverse scientific communities that usually ignore each other, at least in the health field : the foresight researchers which use formal qualitative techniques to identify major trends and drivers in the evolution of societies in order to target critical uncertainties and prepare for alternative contrasted scenarios for the future (an exercise which is already familiar in a number of sectors of the EU but not so much for health) on the one hand, and on the other hand the public health research community, in particular those disciplines (biostatistics, epidemiology, health econometrics) which use quantitative techniques to prospectively forecast and model the epidemiological pattern of diseases and health systems. The second FRESHER international meeting, which took place in Rome on January 15 and 16, 2016 made us quite optimistic that effective integration between these two complementary approaches can be achieved in the context of the project.

THE FRESHER PROJECT: IN THE EYE OF THE CYCLONES - 2/3

Thirdly, although FRESHER is based on academic excellence of both its partners and its methodology, it is carried out in an operational spirit, in order to illustrate options for containing the burden of NCDs according to alternative (health and non-health) policy choices.

For accomplishing these three goals, a fourth one is a necessary prerequisite: that beyond the consortium partners, the whole project is an interactive process with key stakeholders in public health and European policies. Again, the Rome meeting offered us some opportunities to deepen the exciting dialogue with stakeholders that had already been initiated through previous regional workshops of the project. Indeed, at the second meeting of **EUROHEALTHY** the other project supported by the EU in the field, which is coordinated by my friend and colleague Professor Paula Santana from the university of Coimbra, we have decided to join forces in a common effort to translate our results (including their eventual differences) for a dialogue with European public health decision-makers.

The first year of FRESHER activities has occurred in a difficult context. By many aspects, 2015 has been an “annus horribilis” for the EU which has been directly affected by the economic and geopolitical turn moils of a “depolarized” world, where no superpower can guarantee equilibrium and security anymore: terrorist attacks, increasing economic and political tensions between the southern and northern, as well as the eastern and western parts of both the EU itself and Europe as a whole.



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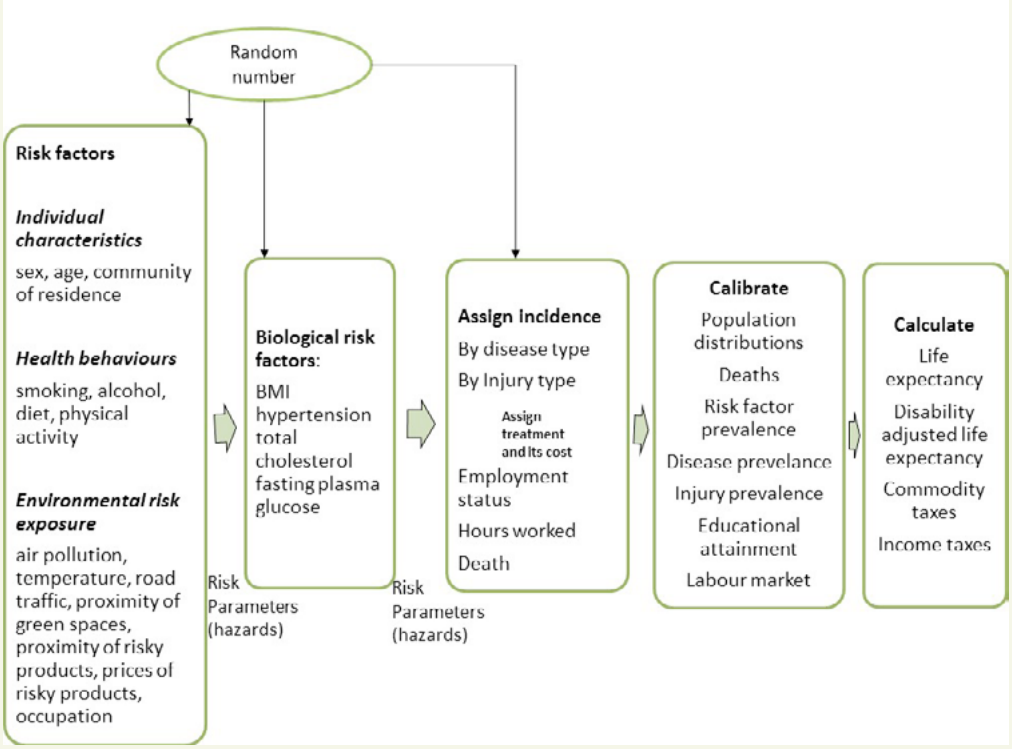
THE FRESHER PROJECT: IN THE EYE OF THE CYCLONES - 3/3

Fortunately, 2015 also offered some reasons for hope. In September, the General Assembly of the United Nations unanimously adopted the **17 new "Sustainable Development Goals"** (SDGs) at the 2030 horizon. Contrary to their predecessors (the Millenium Development Goals which exclusively targeted developing countries), the SDGs concern the whole planet including the EU. The fight against NCDs is now explicitly included in **SDG 3** about "good health and well-being" and the World Health Organization (WHO) has issued a global goal of reducing NCD-related mortality by a quarter in 2025. Moreover, the rationale underlying SDGs calls for increased inputs from science to help understanding the interactions between each of them (for example between reducing poverty and promoting good health or between climate change and health), and finding sustainable solutions based on positive synergies between individual SDGs. In December, at the COP 21 in Paris, a historic step forward for climate action was accomplished since the draft agreement reached by countries "is differentiated, fair, sustainable, dynamic, balanced and legally binding", according to the French Ministry of Foreign Affairs, Laurent Fabius, who chaired this United Nations Conference.

To be honest, the FRESHER project was not built ex ante with the idea of responding to the major crises EU is now facing or seizing the opportunities offered by the new international agenda for sustainable development. However, its original methodology allows us, through foresight scenario building as a way to fuel a microsimulation prospective model of the future of NCDs and their impact in Europe, to effectively take these challenges into account and provide some evidence-based innovative ideas for European decision-makers in all sectors affecting public health. An exciting perspective for the work of the FRESHER Consortium in 2016.

Microsimulation: an introduction to the FRESHER model

The development of an empirically-based micro simulation model is a central component in FRESHER. With input from all work packages, the model will capture social, behavioural, and psychological risk factors for NCDs as well as disease onset and treatments and their health, education, labour-market and fiscal consequences for three European regions (Central-Eastern, Southern and Northern) through one unified and comparable population modelling framework.



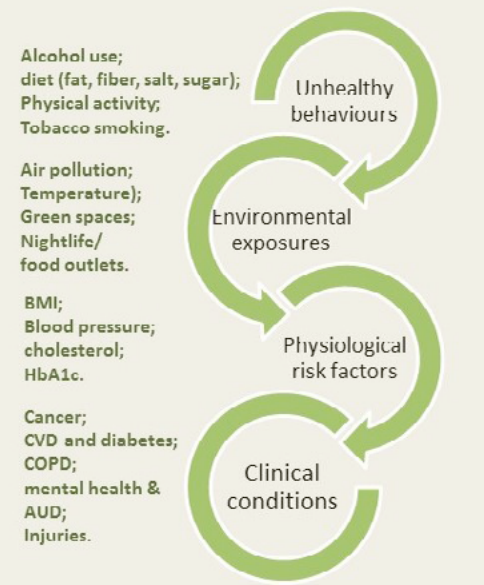
FRESHER Microsimulation Framework

What are microsimulation models for policy good for?

Microsimulation models are generally used to assess the impact of public policies, giving decision makers a powerful tool for an ex-ante (prior to implementation) policy evaluation. The key defining feature in all microsimulation models is the generation of individual-level data under different policy scenarios. Micro-simulation models can, as a result, reproduce the characteristics and behaviours of a large sample of individuals representing the whole population of interest, and its underlying diversity. Dynamic micro-simulation models like the U.S. FEM, Swedish SISEM-LEV or the OECD CDP model allow certain characteristics, such as tobacco smoking, alcohol-consumption or air pollution exposure to evolve over time in a realistic manner due to factors endogenous within these models.

What makes the FRESHER microsimulation model special?

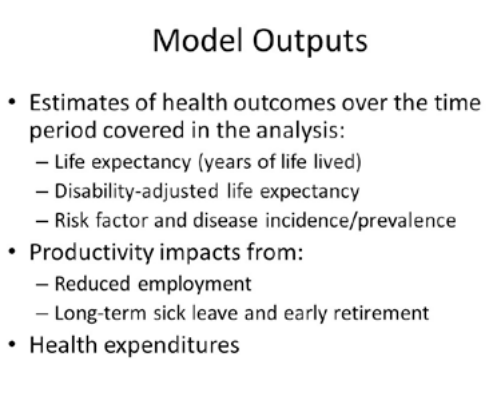
Unlike most microsimulation models that exist to date, the distinct value added of the FRESHER is that it represents a multi-risk factor and multi-disease model able to capture the vast majority of factors that influence health in the long term. The FRESHER model employs a so-called 'causal chain' that accounts for the interdependencies of risk factors, behaviours, clinical conditions, environmental exposures and the ways these elements interact with each other. Another innovative element of the model is the integration of quantitative modelling and qualitative foresight, taking into account trends, drivers and policy scenarios that will be used to assess policy options to reduce the burden of NCDs.



The causal chain: from behaviours to diseases

What are the specific outcomes of the model?

The FRESHER model will simulate a range of scenarios and assess the impact of future policies in respect to health outcomes. The key outputs of the model include life expectancy changes over time periods covered by time horizons 2025 and 2050, the evolution of risk factors and disease prevalence as well as productivity impacts on employment. Another key output will account for health expenditure including how it could be modified by policies that would change the epidemiological trends predicted in the FRESHER scenarios. Upon testing and validation, the model will be released as a decision support system tool, thus helping EU bodies and policy makers to consider the full range of costs and consequences of different policy actions.



Twitter Data Analysis - a Valuable Contribution to Strategic Foresight ?

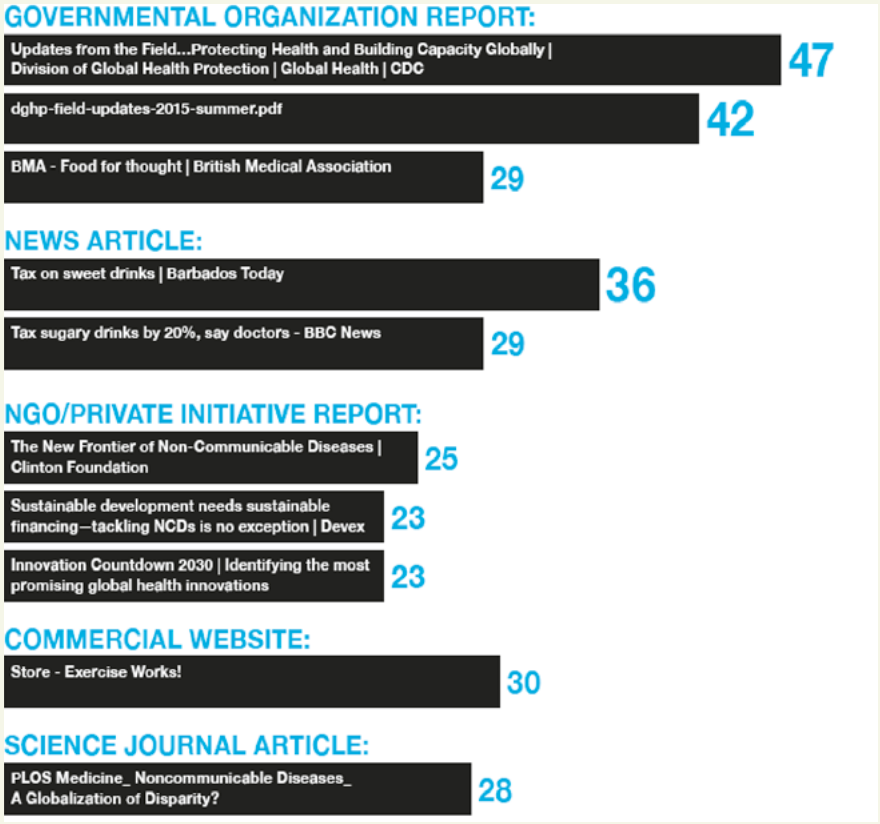
A case study of the EU research project "FRESHER" *by* ***André Uhl*** *(based on Master Thesis in Future Studies at Freie Universität Berlin)*
contact: mail@andreuhl.de

The aim of this study is to examine whether a particular **Twitter hashtag** might serve as a search tool to receive valuable information for the project. Data with the search term **#ncds** were imported via the program NodeXL from the Twitter search network. The received dataset contains a total number of 3,656 Twitter messages from July 4th to September 7th, 2015. They were then analyzed based on following research questions:

1 . Do messages with the hashtag #ncds contain thematically relevant web links and lead to valuable information?

Examination of Web links

The number of web links included in the tweets of the dataset is counted and the ten most shared links in the network are checked regarding the included information. These web links are then categorized in terms of the character of information and their source, for example news, governmental report, NGO or private initiative report, scientific study or commercial website.

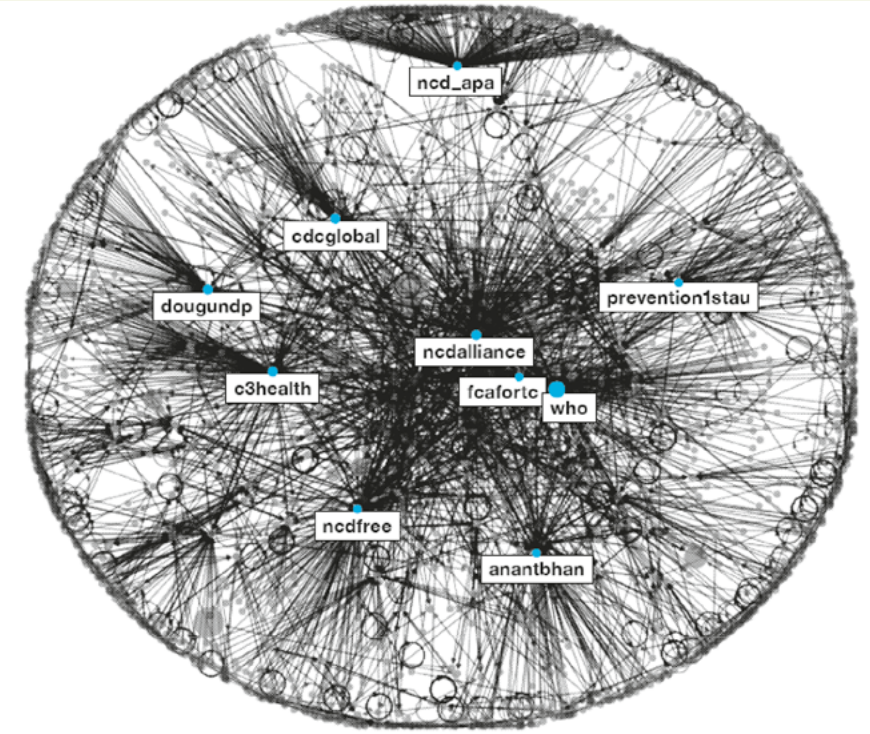


Top ten web links and counts in tweets with #ncds, with type of information source and the frequency of distribution

2 . Can central actors of a Twitter network around the hashtag #ncds be regarded as useful contacts for the foresight project?

Identification of central actors/ Social Network Analysis (SNA)

In this approach such Twitter users are defined as central, who receive the most attention within the network of the dataset. The level of attention is measured by the number of mentions (including retweets) and replies a user has in the network represented by the in-degree number, meaning the number of edges going to a vertex in a directed graph.



Visual representation of top users: Network actors highlighted by in-degree number (a measure for network centrality). Graph showing all vertices and edges in the network of #ncds. Size of vertices is proportional to number of followers on Twitter. Top ten users with highest in-degree number have blue vertices and name labels.

3. Do Tweets with the hashtag #ncds contain other hashtags representing determinants and drivers of noncommunicable diseases?

Hashtag Analysis:

Hashtags included in the tweets with #ncds are counted, analyzed and compared to a list of determinants and drivers of NCDs, which were identified previously during the FRESHER project. Furthermore it is examined which hashtags are most frequently mentioned.

Word cloud displaying hashtag terms included at least 15 times in tweets with #ncds. Color and size vary in proportion to frequency of mentions

TWITTER ANALYSIS
NCDs

CONCLUSIONS

- Most frequently shared web links contain current and relevant information about topics closely connected to the development of NCDs.
- Contribution of valuable insights to the scanning process of the FRESHER project.

- User profiles with highest in-degree mainly belong to NGOs, governmental agencies or activist groups specialized in the field of NCDs.
- Some of these actors who play a central role in the Twitter debate on NCDs can be regarded as relevant contacts for the FRESHER project.

- Overview of the current Twitter debate on NCDs and the discussed topics while using the hashtag#ncds.
- Some hashtag terms correspond with some of the determinants and drivers of NCDs, while others show a clear relation to these.

Summary and Discussion

Twitter data analysis can be regarded as one component in the interaction of different methods to receive current information at the beginning of a foresight project. It can help to sharpen the view of the topic under debate and to broaden the perspectives on possible future developments. The analysis can be done in relatively short time due to its semi-automated nature. The Hashtag-based approach provides an easy and effective way to capture a big share of the Twitter discussion on a particular topic, which is consciously contributed.

Statements and assumptions regarding shared content, network actors, or hashtags only apply to the time frame of the study. Assumptions about developments or topical trends require data analysis over longer time periods. A hashtag-based approach carries the risk to exclude messages contributing to the same topic without using this hashtag, and also the risk of potentially selecting the wrong hashtag or ignoring alternatives. Suitability of a Twitter data analysis depends on the topic under debate.

Source for all figures: André Uhl, master thesis: "Twitter Data Analysis as Contribution to Strategic Foresight – The Case of the EU Research Project 'Foresight and Modelling for European Health Policy and Regulations' (FRESHER)", 2015

FRESHER

UPCOMING EVENTS:

- **Conference and stakeholders consultation "Towards better prevention and management of chronic diseases"**
  April 21, Brussels, DG SANTE

- **Conference "Building the future of health - Game changing concepts for Healthy Ageing and the built environment"**
  June 1-3, Groningen, Netherlands

- **FRESHER Consortium Meeting**
  June 21 and 22, Vienna, AIT

- **19th European Health Forum Gastein**
  Sept 28-30, Bad Hofgastein, Austria

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All interested parties and relevant stakeholders are invited to join.

Follow FRESHER on Twitter!

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