SWISS BIOTECH™
1NATION1CLUSTER

News Bulletin

No. 18
Sept.
2016

In cooperation with the CTI

KTT-Support
National thematic networks

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Commission for Technology and Innovation CTI

Editorial

Nic Alexakis

This bulletin focuses on the changes on the 'Swiss Witholding Tax Act' and a write up of the WEF on the solid integration of asylum applications between January 2015 and June 2016.

WEF reports that Science and Technology will transform Africa in the coming years.

Biotechnology Production of Isobuten by TEMAS.

The CTI vouchers are not available anymore: see text page 10 *(in French and German)*

Contents

pwc

PwC breaking news

Managing Taxes: Changes on Swiss Withholding Tax Act Approved by Federal Assembly

On 20 September 2016, the Swiss Council of States approved an amendment of the Swiss Withholding Tax Act. As a result, the notification procedure for withholding tax on dividend distributions shall – even in case the 30-days-filing-deadline is not met – be granted by the Swiss Tax Authorities, if the relevant conditions for the notification procedure are fulfilled.

The Council of States also accepted a transition rule, which was proposed by the National Council in the amended Swiss Withholding Tax Act. Based on this transition rule, the amended law shall also be applicable for cases which occurred prior to the enactment of the law changes, unless (i) the tax liability or the late payment interest is/are time-barred ("verjährt") or (ii) was/were already finally assessed prior to 1 January 2011.

As a consequence, taxpayers who had to pay late payment interest due to missing the 30-days-deadline for filing the notification procedure, may in principle retroactively claim back respective late payment interest. After the (potential) enforcement of the new law, the taxpayer will have to make an official request in this regard within one year.

On 22 September 2016, the National Council has settled a last difference in respect of the penal provisions. The provisions agreed by both chambers do now foresee that missing the 30-days-filing-deadline may lead to an administrative fine of up to CHF 5'000.

In a last step, the revision of the Swiss Withholding Tax Act has to be adopted by the final vote of both chambers of the Swiss parliament, which is scheduled for 30 September 2016. In case no referendum is levied (a 100 days-deadline applies), the Federal Council (Swiss government) will – presumably by mid/end January 2017 – determine the exact date of entry into force.

We will inform you on further developments in this regard and if potential next steps need to be considered.

Stefan Schmid
Partner
Tax & Legal Services
stefan.schmid@ch.pwc.com

NTN partners:

Swiss Biotech Association

biotechnet switzerland

Project partner:

SWITZERLAND GLOBAL ENTERPRISE
enabling new business

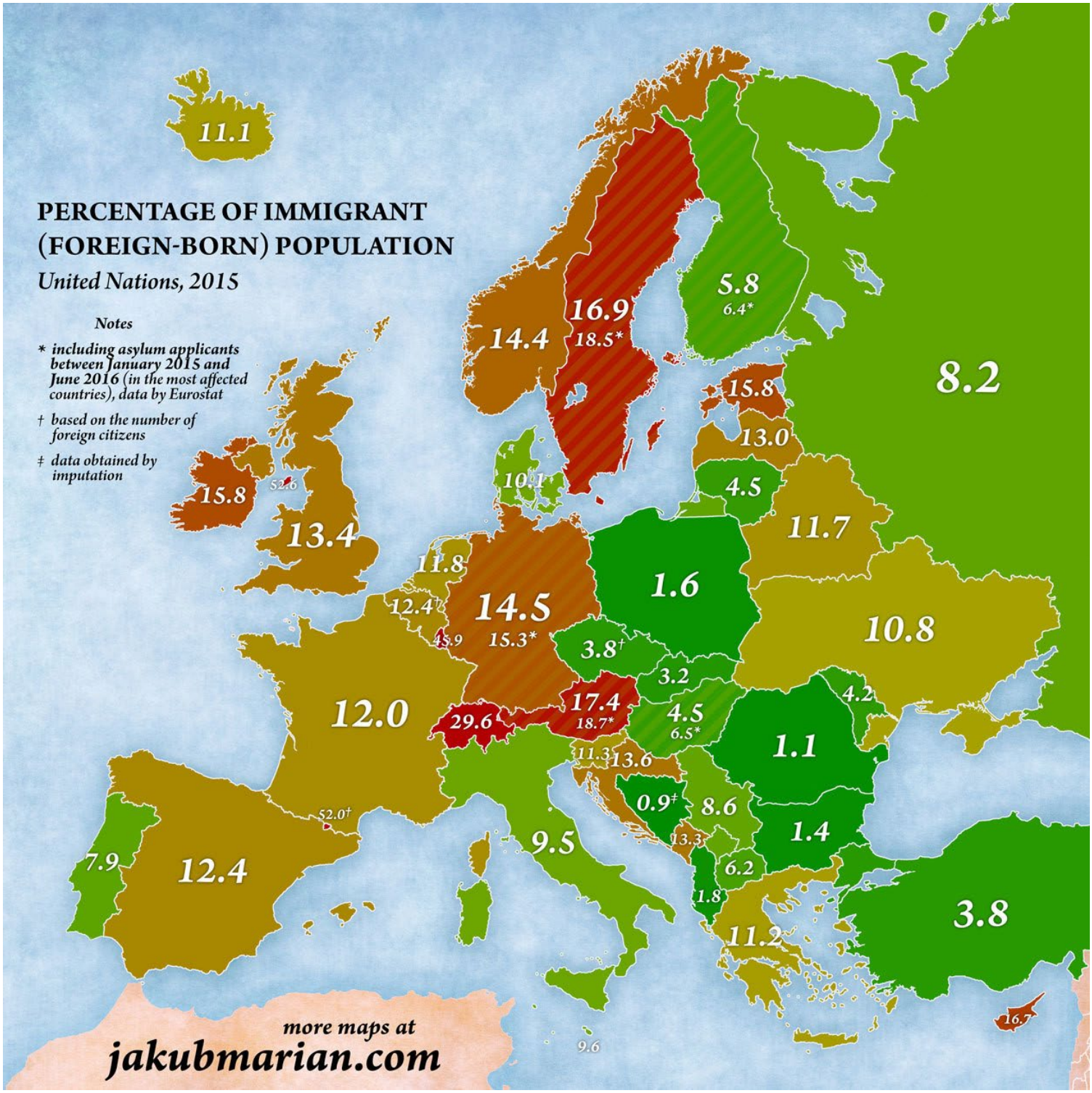
Write up by WEF on Immigrations and Status of Switzerland.

WEF wrote an interesting report on the distribution of Immigrants using data from Eurostat on asylum appliations between Januar 2015 and June 2016.

1. What is The Distribution of Immigrants

The population with the highest percentage of foreign-born people is Luxembourg (45.9%), followed by Switzerland (29.6%), Sweden (18.5%), Austria (17.4%), Estonia (15.8%) and Germany (14.5%). The UK comes in at 13.4%.

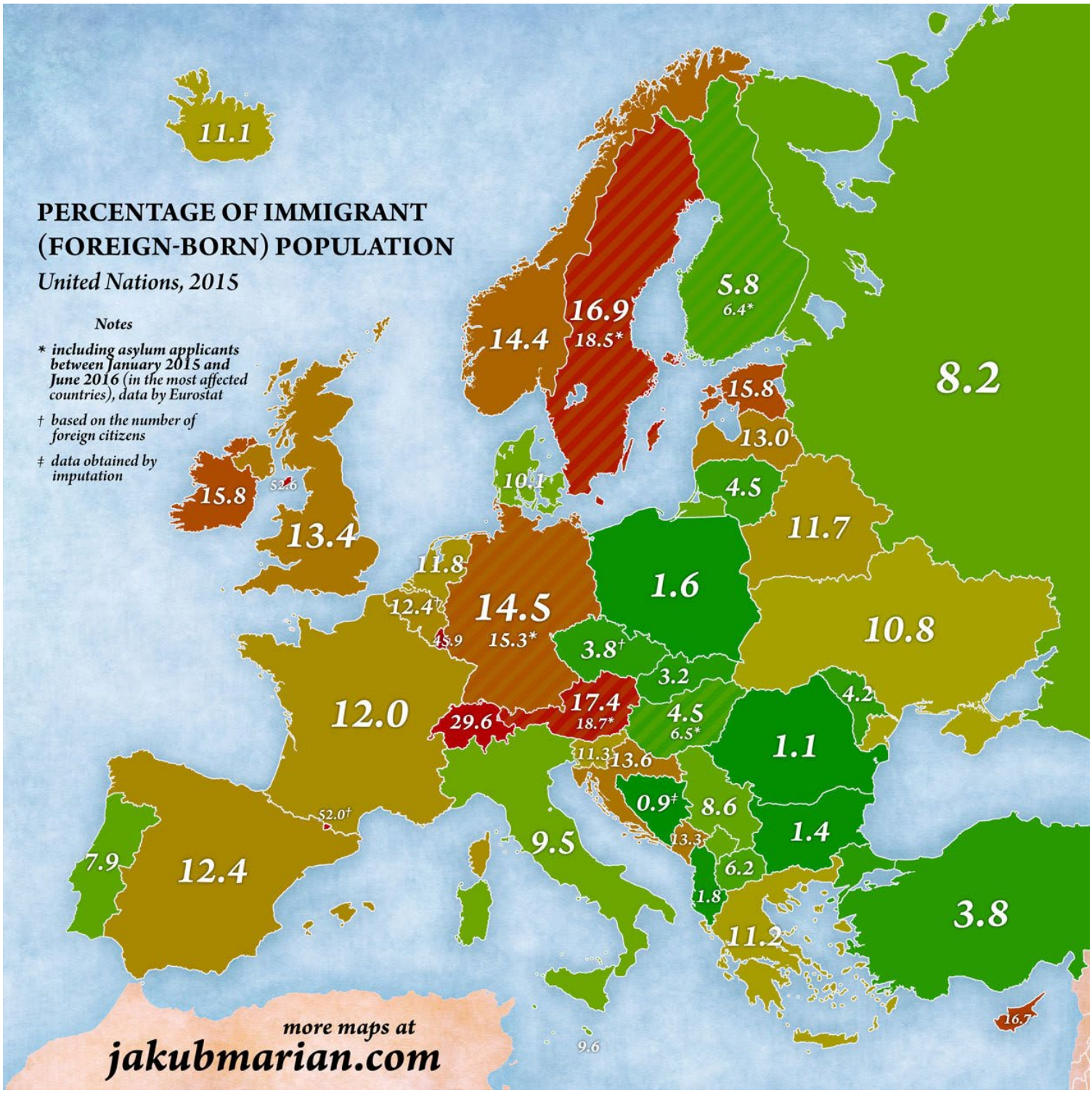
Using data from Eurostat on asylum applications between January 2015 and June 2016, Marian then mapped which countries have been most affected by the European migration crisis. Austria and Sweden were the only European countries to register an above 1% increase in their foreign-born populations as percentage of the total, while Germany showed a less than 1% increase.



2. Where Do The Majority of Immigrants Come From?

The highest proportion of immigrants to the UK in 2015 hailed from India; for Norway, it's Poland; and for Austria and Switzerland, it's neighbouring Germany. Most of the Republic of Ireland's foreign-born population comes from the UK.

France, Spain and Portugal's immigrants come from further south (Algeria, Morocco and Angola respectively). For Greece and Macedonia, it's Albanians. Poland and the Czech Republic saw the most immigrants from the Ukraine. In many eastern European countries, Russia has provided the most immigrants.



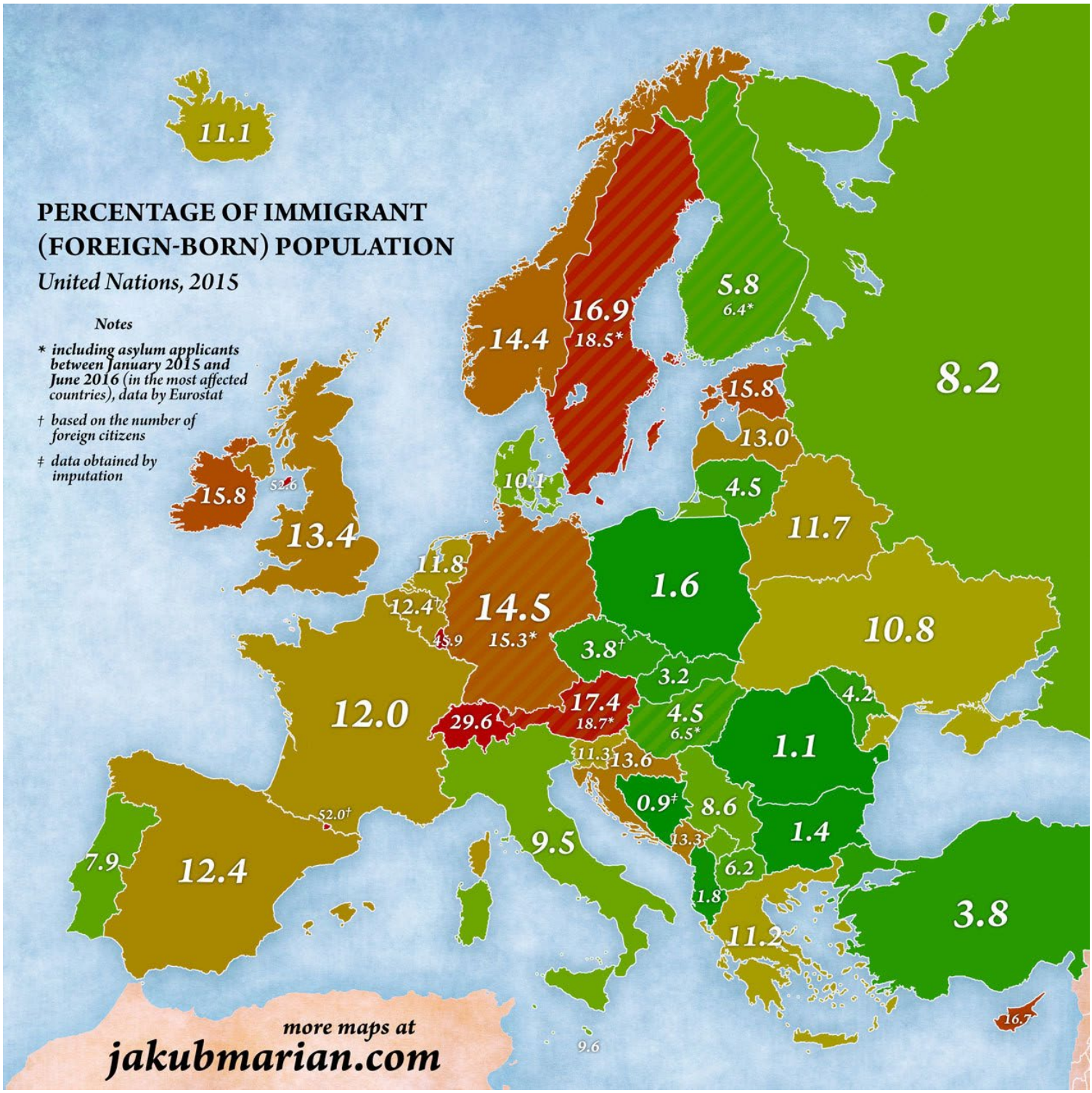
3. How That Number has Changed in The Past Five Years

Marian's third map shows how the political upheavals of the past five years have affected the original immigration figures.

The trends in map one, which showed the countries and their foreign-born population percentages, continue in map three.

For instance, Luxembourg, Switzerland, Sweden, Austria and Norway, which showed the highest percentage of foreign-born people compared to overall population, also saw the highest increases in immigrant populations between 2010 and 2015. The UK and Finland followed close behind.

The countries with the largest migrant populations settling elsewhere were Poland, Serbia, Germany and Romania.



4. The Immigrant Populations Expanding The Most in Each Country

In his fourth and final map, Marian looked at the immigrant populations expanding the most in each country by comparing the UN figures from 2010 to those of 2015.

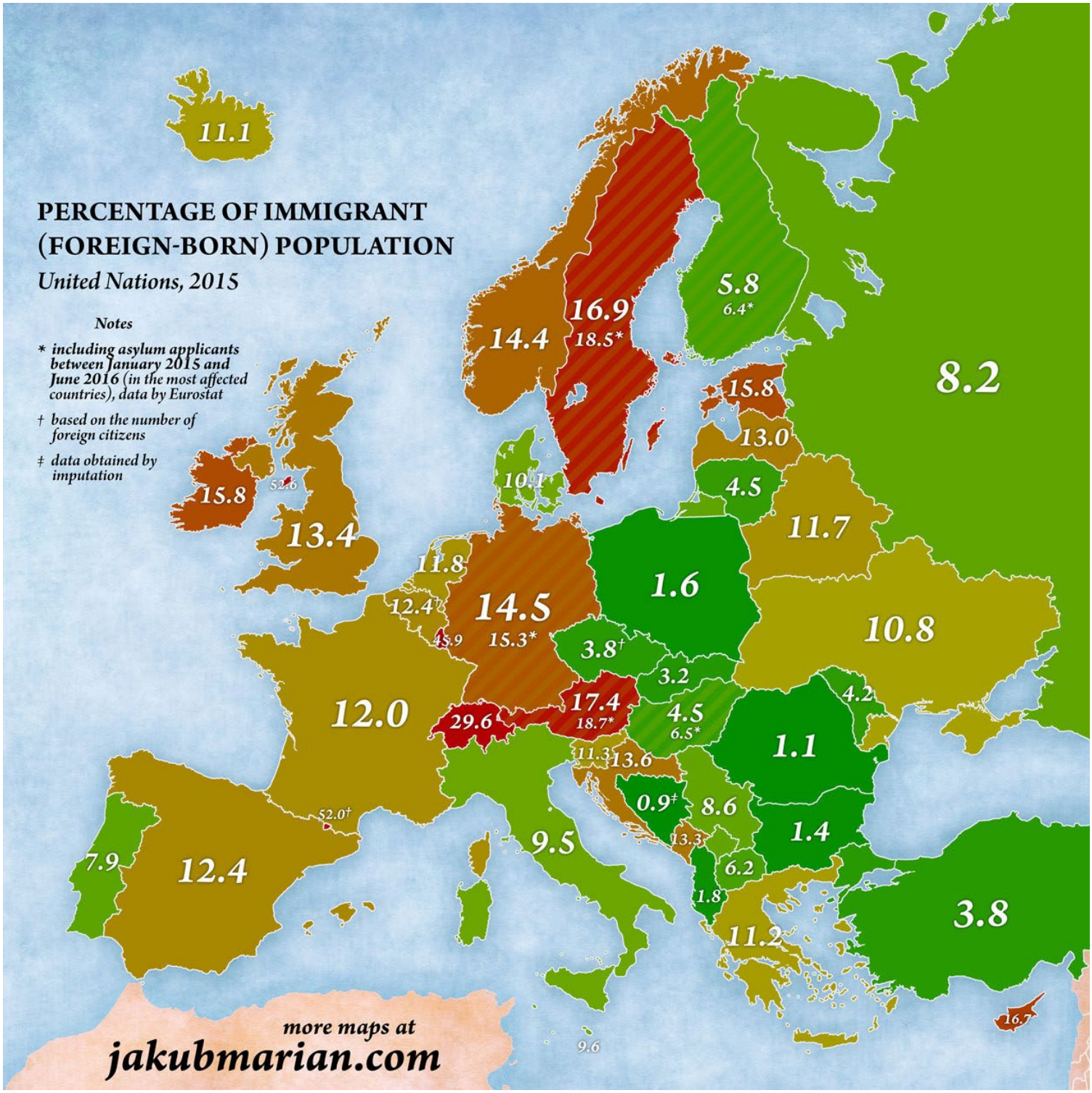
Some countries, such as Poland and Greece, showed a decrease in their immigrant populations as a percentage of their populations. For around half of European countries the pattern remained more or less the same as the figures from 2015 (map 2), including Indians to the UK, British to Ireland and Poles to Norway.

Differences in other countries included more Cubans to Spain (Morocco previously), fewer Russians moving to eastern European countries, and an increase in Syrians as a percentage of the population of Sweden.

However, these figures, especially where declines are shown, could also be the result of a general fall in the population as a whole.

The designations employed and the presentation of material on these maps do not imply the expression of any opinion on the part of the World Economic Forum concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This article has been corrected.



Forget Natural Resources: It's Science and Tech That Will Transform Africa

This post is published in collaboration with Africa Policy Review

Image: REUTERS/Thomas Mukoya

Written by Calestous Juma Professor of the Practice of International Development, Harvard Kennedy School, Harvard University
Regular Author
Published Wednesday 17 August 2016

More on the agenda

The slump in commodity prices and the associated economic uncertainties are forcing African countries to explore new development strategies that are more durable. One obvious shift is investing in human resources by building scientific and technological capacities.

This would be a dramatic departure from the conventional focus on the continent's natural resources. The transition requires African policy-makers to focus more on how their own societies can shape their scientific and technological trajectories.

African societies – with their myriad economic and social challenges – offer the richest test-bed for scientific and technological research. They also offer unprecedented opportunities for applying the world's abundant scientific knowledge and engineering expertise to solve societal problems.

Scientific research for the greater good

Conventional wisdom informs African policy-makers that their economies are likely to grow if they invest significantly in basic research and development (R&D). The case is often made for devoting a minimum of 1% of a country's GDP to R&D. The assumption is that investing in research would result in new technologies, which would then be deployed in the economy to boost development and improve human well-being.

There is justification for investing in R&D, but not because of the linear view of such investments. This approach has been sold to African countries over the decades and continues to be promoted uncritically. This view assumes a one-way flow of events: from basic to applied R&D, and to societal impacts.

The view also treats science as if it was something that happens outside society. This perception is not unfounded. Many in the scientific community would prefer to receive financial support for their research without the related expectation of addressing social challenges. It is not uncommon for the scientific community to argue for increases in research funding, while at the same time seeking independence from close government scrutiny.

As outlined by the African Union's 10-year Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024), the real reason to invest in R&D is to respond to challenges in key sectors such as agriculture, health, ecological management and the built environment. This approach does not negate the importance of scientific research – it simply seeks to connect scientific and technological endeavours to broader societal needs.

Much of Africa's scientific advancement will come from technologists and engineers whose obstacles might yield new scientific insights. The second law of thermodynamics, for example, stemmed from efforts to improve the steam engine. The technology was first developed to address a practical challenge of helping to pump water from flooded mines. In this case, science followed engineering. The point here is not to argue against basic research, but to underscore two important points. First, that scientific enterprise is likely to receive greater support if it is directly connected to societal needs. Second, a creative and open approach to scientific research needs to acknowledge the two-way traffic for scientific discoveries.

Science can therefore be advanced as part of the ongoing investments in infrastructure projects and expansion of entrepreneurial activities across the continent. Using a similar approach, African countries could start to think of their natural resources not solely as export commodities but reservoirs for geological knowledge, as well as a basis for advancing material science and technology.

An African tech revolution

Efforts to address Africa's problems in diverse fields might yield new scientific discoveries that are directly linked to the continent's challenges. In this respect, science would serve society just as society serves science. The two co-evolve and shape each other in complex and dynamic ways over time.

Indeed, advances in the application of mobile technology in Africa are starting to shape fundamental research as young people discover the

importance of mathematics and electronic engineering in the development of new products such as apps and digital services. Similarly, a few African research institutions are starting to harness the power of nanotechnology to explore new properties of natural resources that can be leveraged to develop new products.

In the same vein, Africa can leapfrog decades of prior technologies by starting to harness for civilian use the power of technologies such as solar photovoltaics, 3D printing, drones, robots, satellites and synthetic biology, especially gene editing.

African countries are already at the forefront of harnessing these technologies. For example, Rwanda has set itself the ambitious goal of building the first drone airport in the world. An increasing number of African countries are leveraging drone technology to address a variety of resource mapping, delivery and agricultural services. It is through such efforts that salient basic research challenges are likely to emerge.

Pushing the frontiers of agricultural research in response to challenges such as climate change and drought is likely to yield new scientific breakthroughs. Such research results will the lead to further advancement of agricultural research and economic development. The relationship between the two is not linear but iterative.

A more holistic approach to scientific innovation

One of the key implications of acknowledging the interactive approach is the need to abandon the false dichotomy between STEM (science, technology, engineering and mathematics) subjects on the one hand, and the social sciences and humanities on the other. Instead, the focus should be on promoting creativity though the integration of the diverse disciplines. Inventors need legal expertise just as much as medical researchers need anthropological knowledge. The demarcation is a relic that only perpetuates the under-utilization of knowledge for development. It also creates opportunities for unnecessary feuding over limited financial resources.

The co-evolution between science and society challenges not our world view about the place of scientists in society, but the very definition of what we consider to be science. It also calls into question the dominant design of the research landscape among most African countries.

There is a popular view that separates science from other technical fields, especially engineering. In fact, much of the work of engineers is credited to scientists, especially by the press. Scientists take the credit for new technology products and engineers usually shoulder the blame when technologies fail.

Accepting the view that science and society co-evolve requires the recognition of engineering and other disciplines as being integral to the research enterprise. Forums that bring scientists together should also endeavour to accommodate technologists, engineers and associated experts from the social sciences and humanities.

This has implications on the way that universities are structured. It calls for greater emphasis on trans-disciplinary collaboration. Such an approach is not just about the token inclusion of experts from other fields, but about genuine efforts to bring the diverse disciplines together to help find solutions to social problems.

A new generation of universities

Equally important is the need to address the common separation between research, teaching, extension and commercialization of new products. In many African countries such separation is buttressed by law. Research institutes undertake research but they do not teach. Conversely, university lecturers concentrate on teaching with limited support, incentives or time for research.

There are two debilitating consequences of this separation. First, by not having students, research institutes lack the basic human capacity to move their results from laboratories to the marketplace. In more dynamic innovation ecosystems, this function is performed by university students or recent graduates. Universities that do not undertake much research end up passing on outdated knowledge to successive generations of students. Today's rapid rate of scientific advancement renders such knowledge obsolete in the early stages of the professional lives of lecturers.

An obvious outcome of such trends is the decline in the quality teaching and the irrelevance of the knowledge that students acquire. These impacts generally undermine the credibility of research institutes and universities. They also make it harder to argue for increasing their financial support.

One way to bridge these gaps is to gradually create a new generation of universities that combine research, teaching, extension and commercialization of new products and services. Such "innovation universities" should reflect the view that science and society co-evolve.

Indeed, some countries reflect this confluence in the structure of their ministries. Japan, for example, has one ministry dealing with education, culture, sports, science and technology. In many African countries, science is viewed as the opposite of culture. Most African governments lump culture with arts, tourism and handicrafts. Only Comoros has research and culture under one ministry. The point here is not to copy the Japanese model, but to highlight the fact that most African countries consider science to be separate from culture. The tendency is to define culture in static terms despite considerable evidence of creativity in handicrafts, making them centres of innovation.

Improving the capacity of existing institutions to foster research requires building capacity in innovation management. It is for this reason that the Harvard Kennedy School (HKS) has launched the Technology, Innovation, and Entrepreneurship in Africa (TIE-Africa) Executive Programme with a $1 million gift from the Schooner Foundation to assist African countries to build their innovation management capacity.

The time has come for African countries to view their social and economic challenges as opportunities for scientific advancement. It is also time to bring science and other fields, such as engineering, the social sciences and humanities, together to help address societal challenges. Only through such collaboration can we hope to advance both science and society as an integral whole.

TEMAS News Ticker – Biotechnologische Herstellung von Isobuten

TEMAS
Kraft für Innovationen

Keywords: Biotechnologische Prozesse, erneuerbare Rohstoffe, Elastomere, Gummi, Kautschuk, Kunststoffe, Zucker, Fermentierung, Kraftstoffe

Die Verwendung von erneuerbaren Rohstoffen für die Herstellung von organischen Chemikalien und Treibstoffen ist wichtig, um deren langfristige Verfügbarkeit sicherzustellen. Für Treibstoffe wurden bisher zwei Ansätze verfolgt: Die Verwendung von Alternativen wie Biodiesel oder Bioethanol sowie die Nutzung von Bioraffinerien. Letztere steht aber nicht nur vor grossen technischen, sondern auch vor grossen ökonomischen Hürden. Alternative Treibstoffe können dagegen technisch und ökonomisch einfacher den auf Erdöl basierten Kraftstoffen beigemischt werden. Eine andere Möglichkeit einer partiellen Umstellung auf erneuerbare Rohstoffe wäre die Verwendung von biobasierten Kraftstoffadditiven wie Isooktan, MTBE und ETBE.

Mit einer Pilotanlage kann nun Isobuten, einer der Ausgangstoffe für die erwähnten Kraftstoffadditive, in einem biotechnologischen Verfahren direkt aus Zuckern gewonnen werden. Die Zucker wiederum können entweder als solche angebaut werden, oder aus landwirtschaftlichen Neben- bzw. Abfallprodukten gewonnen werden. Isobuten wird aber auch für die Herstellung von Plaste und Elaste verwendet. Somit eröffnet dieses Verfahren auch einen Weg zur erneuerbaren Herstellung von Kunststoffen.

Geschätzte Verantwortliche der nationalen thematischen Netzwerke NTN

Mit der Kreditbotschaft für Bildung, Forschung und Innovation (BFI-Botschaft) 2013 - 2016 sprechen Bundesrat und Parlament u.a. die Mittel für die Förderorganisationen des Bundes.

Der KTI wurden für die Förderung über den Innovationsscheck 1 Mio. CHF pro Jahr zur Verfügung gestellt. Dies entspricht 133 bewilligten Innovationsschecks pro Jahr.

Für 2016 wurde dieses Förderbudget für den Innovationsscheck aufgrund der hohen Nachfrage und der Vielzahl sehr guter Vorhaben bereits ausgeschöpft.

Ich bitte Sie deshalb keine Innovationsscheck mehr für dieses Jahr zu empfehlen und auf die Möglichkeit zur Einreichung in 2017 hinzuweisen. Gesuche, die kürzlich eingereicht wurden, werden wir nicht aufbewahren, um sie dann im nächsten Jahr in die Expertenteams zu bringen. Diese Gesuche werden an die Gesuchsteller zurückgeschickt mit der entsprechenden Kommunikation.

Auf der KTI-Webpage wird auf diese Situation ebenfalls hingewiesen werden. Wir danken Ihnen für die Kenntnisnahme und die entsprechende Kommunikation in Ihrem Netzwerk. Für Fragen stehen wir Ihnen gerne zur Verfügung.

Aux responsables des réseaux thématiques nationaux (RTN)

Madame, Monsieur,

Le Conseil fédéral et le Parlement allouent les fonds destinés notamment aux organes d'encouragement de la Confédération dans le cadre du message portant sur les crédits destinés à la formation, à la recherche et à l'innovation (message FRI) pour les années 2013 à 2016.

Un million de francs par an est mis à la disposition de la CTI dans ce contexte pour l'encouragement par le biais du chèque d'innovation, permettant ainsi à la CTI d'approuver 133 chèques d'innovation par an.

En raison de la forte demande et du nombre important de projets de qualité, ce budget est déjà épuisé pour l'année 2016.

Je vous prie de ce fait de ne plus recommander de chèque d'innovation pour cette année et de signaler la possibilité de présenter une demande dans ce sens en 2017. La CTI ne conserve pas les demandes qui lui sont parvenues récemment afin de les transmettre aux experts en 2017. Ces demandes sont retournées aux requérants avec l'information requise.

Cette informations figure également sur le site Internet de la CTI.

Nous vous remercions de prendre note de cet état de fait et de diffuser la communication dans le cadre de votre réseau.

Nous restons à votre disposition pour toute précision complémentaire et vous prions d'agréer, Madame, Monsieur, nos salutations distinguées.

Drugs That Were Once Lifesavers Run an Increasing Risk of Becoming Worthless, Unless We Act

Image: REUTERS/Stoyan Nenov

Written by Peter Søgaard Jørgensen Researcher, Global Economic Dynamics and the Biosphere, Royal Swedish Academy of Sciences

Published Wednesday 21 September 2016

More on the agenda Further reading arrow

Bacteria have now evolved to deflect our most powerful antibiotics – and we only have ourselves to blame. Antibiotics are over-used in farming and medicine. If we want long-term solutions we need to look beyond the search for new antibiotics. Today, world leaders turn their attention to this global threat and they must use this opportunity to implement a strong international plan to protect an essential global commons.

Since Alexander Fleming's discovery of penicillin in 1928, antibiotics and other types of antimicrobials have protected hundreds of millions of people from infectious diseases and are now taken for granted as part of modern life. But there are trillions of beneficial bacteria that are essential for our bodies and Earth's living resources. Unfortunately, overuse is increasingly depleting this global common resource and replacing it with increasingly hard-to-treat resistant microbes. A recent study estimates 200,000 babies die each year as a result of this over-use.

The problem is that the typical solution is to invest in innovation to find new antibiotics. In a recent commentary in the journal Nature, I argue, with colleagues, that this approach tends to downplay important solutions such as hygiene, sanitation, vaccines, or even cultural changes. In fact, the same study estimating the toll of resistance in newborns, also estimated that a pneumococcal vaccine could prevent 11.4 million days of antibiotics treatment for pneumonia, likely reducing the burden of resistance significantly. It is time to reframe the debate and recognize that the true exhaustible natural resource - on par with the ozone layer and our stable climate - is the global community of micro-organisms, not the antibiotics.

Deaths attributable to antimicrobial resistance every year by 2050

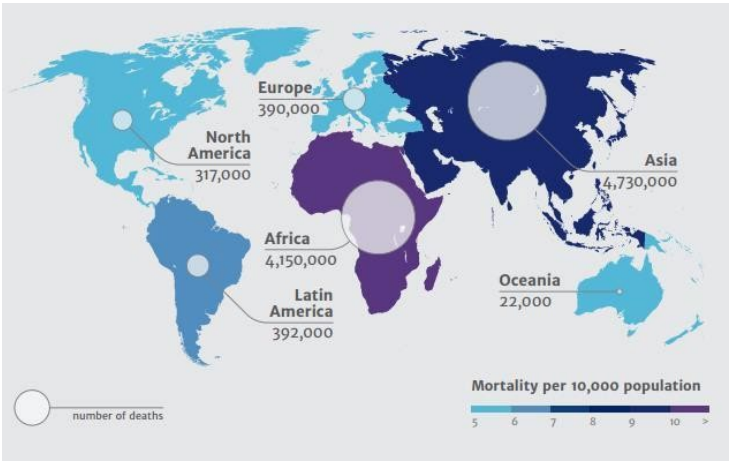


Image: Review on Antimicrobial Resistance 2014

Much like fossil fuels, antimicrobials have become crucial building blocks of modern civilization and we do not have a perfect substitute ready. With global transport and increasing rates of international spread, antimicrobial resistance is increasingly becoming a global problem in need of coordinated systemic action. The repeated calls for an organization similar to the Intergovernmental Panel on Climate Change (IPCC) for antimicrobial resistance over the past years are therefore very pertinent.

Today, in conjunction with the United Nations general assembly in New York City, heads-of-state meet to take action at the UN high-level meeting on antimicrobial resistance. Short of a UN convention for antimicrobial resistance, leaders at the UN meeting should set global targets to curb overuse of antimicrobial drugs, limit levels of resistance, and accelerate implementation of the WHO's global action plan from 2014. Such targets must secure stronger accountability, but must also emphasize the many benefits of microbes.

Changing perceptions

Micro-organisms are a global public good. They made Earth liveable before humans evolved and they continue to do so. They do this not only by being the engines that run the critical nutrient cycles, secure air, water, and soil qualities, but also by helping our bodies' digestive and immune systems develop. Without microbes, no humans.

However, human perception of microorganisms does not reflect this, nor does our basic knowledge about them. A 2015 World Health Organization (WHO) survey across 12 countries found that 64% of the public wrongly believe that antibiotics also work for viral infections such as influenza and colds. Such basic knowledge gaps lead patients and physicians to reach for antibiotics without appreciating the costs of antimicrobial resistance.

If leaders at the upcoming UN meeting want to curb the long-term challenge of resistance they must take a diverse and affirmative set of actions. Underlying them all, they must connect the awareness of human civilization to the global microbiome. This involves putting microorganisms on the global school curriculum alongside climate change and the other global environmental challenges.

However, passive learning has rarely been a successful strategy for creating societal change. Luckily, the decreasing costs of gene sequencing technology now allows society at large to participate in monitoring the microorganisms (benign and resistant ones) in their own bodies and in the environment. The rapid increase in citizen and public science as a tool for both monitoring the environment and changing societal norms must now spread faster than antimicrobial resistance.

Curbing use

Non-essential antimicrobial use must be scaled back both in livestock production and in humans.

Without action, global antimicrobial consumption in agriculture may increase 50% and double in emerging economies such as India, China and South Africa. As illustrated by the recent international spread of resistance to the last resort drug Colistin on a mobile gene that can easily be transferred between different bacteria, such a scenario would have far reaching consequences for human health.

One of the most important issues is to phase out globally the use of antibiotics as growth promoters in farming and ensure that farmers or vets do not unscrupulously re-label this as a preventive treatment. A global economic plan to subsidize the transition to antimicrobial free production forms is necessary.

For humans, unrestricted over-the-counter sales as well as black market sales are of the highest priority to curb. In low- and middle-income countries financing of improved sanitation, hygiene and vaccine access is of utmost importance to reduce the reliance on antimicrobials as replacement for these necessary development steps.

Contact:

NTN-SwissBiotech
Editor D. Alexakis - info@swissbiotech.org
Advertising C. Kroll - kroll@swissbiotech.org
Published 3 times a year (print or pdf.)

Main Office, Zürich
Swiss Biotech Association
Stauffacherstrasse 16
8004 Zürich

Office Romandie
Swiss Biotech Association
rue Haldimand 15
1003 Lausanne