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The opinions expressed in this volume are not necessarily those of NRV and are solely those of the individual authors.
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Introduction

By Paul O’Keeffe and Zsuzsanna Pásztor

Over the last year the situation in Syria has gone from bad to worse. With hundreds of thousands dead and millions displaced, the last 12 months have mostly seemed to be full of despair. Government forces, militia groups, international airstrikes, murderous Islamists and so on, all appear to be conspiring in a cacophony of bloodletting with no end in sight. From the safe viewpoints of television and computer screens in the west this spectacle of death has at times seemed almost unreal – our desensitisation being punctured momentarily by some of the more gruesome images that we are presented with on a daily basis. The toxicity of the current political climate in the west has further exacerbated the weariness felt toward yet another mess in the Middle East. With all that has gone on over the last few years it is easy to lose hope. It is for this very reason that, after publishing our previous volume, Syrian Academics in Exile1 (which collected research contributions from academics who have fled Syria), we wanted to put together another volume focusing on the positive efforts being made to offer up some solutions to the Syrian crisis.

While various military and diplomatic solutions are put forward regularly to try to solve the Syrian crisis, no solution gets to the heart of the matter more than increasing access to quality education for the hundreds of thousands, if not millions of Syrian children and young people who are excluded from formal education as the crisis rages on. This is especially the situation for the 100000 + would-be higher education students languishing in displacement camps in surrounding countries. These young people are the best placed to return and develop the country when peace comes. Ignoring their education needs is not an option the international community can afford to entertain. Education, if done right, offers a real beacon of hope for providing long term solutions to empower individual lives and the future of the country.

While primary and secondary education cannot be ignored, the focus of this volume is higher education solutions. Until recently higher education was largely excluded from the international development mix as it was felt that primary and secondary education was more necessary than providing higher education opportunities. Higher education was, essentially perceived as a luxury. The advent of the latest round of international development goals, the Sustainable Development Goals for 2030, is changing this. There has been a dramatic change in thinking when it comes to what kind of education can serve development. It is no longer just education at the basic level, but tertiary education, which is recognised as having great potential to transform the lives of individuals and their communities.

In regards to providing higher education for refugee communities, the international development response so far has mainly come in the form of providing rare international scholarships and increasing access to higher education institutions in countries where large refugee populations are based. While these offers solve some of the problem, they do not provide answers for those who do not have immediate access to scholarships, nor do they solve the problems of refugee students

who face linguistic, social, financial and other barriers in accessing locally based higher education. New forms of education delivery are for the first time trying to address this discrepancy by bypassing the bricks and mortar approach of delivering higher education and attempting to deliver it in a more accessible manner – primarily via blended online delivery.

During the preparation of this volume, we were enthused to see that amid all the despair, destruction and death some light is shining through and real and lasting solutions are beginning to emerge from the international education community. Tired of waiting for others to take the lead, the community has become more and more active and vocal in offering up solutions that can help hundreds of thousands of Syrians with their present need for education and offers hope that education can provide a long term solution to the crisis.

The topics covered in this collection cover different fields. What binds them together is their focus on providing practical solutions for those who need education solutions the most. We have divided the volume in three parts.

Firstly, we include an interview with Dr. Vera Sheridan, an expert on refugee education, who herself was smuggled out from Hungary after the 1956 revolution and became a refugee in the United Kingdom. The testimonial that she narrates combines with her expertise on refugee-education to draw attention to the importance of the psychological aspects of refugee education. Moreover, we hope that this interview helps to illuminate the positive impact that education can have in the lives of refugees.

In the second part of the publication we include articles and opinions that deal with more specific problems relating to the crisis and that provide inspiration on how science and scientists can offer solutions for helping refugees and rebuilding a post-conflict society. In this section, we chose five pieces from different fields that approach the question from general and personal points of view: The section starts with an article by former Deputy Minister for Scientific Research and Academic Affairs in Syria Mr. Mohamed Najib Abdul Wahed. This article discusses the importance of STEM (Science, Technology, Engineering, and Mathematics) education and the investment in “horizontal thinking” in higher education programs, that can have a vital role in rebuilding the country. Following this contribution, Lorraine Charles (Director of Social Enterprise for Pale Blue Dot Life) explores the role that the private sector can play in providing more efficient education solutions for the crisis. Next, Dr. Ahmad M. Abdul Kader, a Syrian expert in agricultural sciences, explores the potential contribution of his own field for the future of Syria. In particular, he draws attention to the importance of saving biodiversity and promoting rapid agricultural growth. This is followed by an article by David Banes (Director of David Banes Access and Inclusion Services), Carine Allaf (scholar and teacher in the United States and the Middle East) and Maggie Salem (Executive Director of Qatar Foundation International) which draws attention to difficulties refugees with disability face when accessing online education. The final article in this section is a contribution from the field of information and communication technology by Dr. Souad Odeh, a Syrian Associate Professor at University Claude Bernard Lyon 1. The article discusses how Information Science and information scientists can enhance the professional integration of Syrians.

The final section of this publication is dedicated to show-casing concrete projects. We hope that by highlighting some outstanding initiatives for providing education solutions for Syrians, more people will be inspired to take action and transform the future prospects of Syria. The section opens with an article by Marianne Boqvist which presents the web-based Tahdir training project for professional experts and scholars. Tahdir is managed by the Arab Reform Initiative (in cooperation with other organisations) and aims to enable Syrians to be the real actors in the reconstruction of their own country. This is followed by an article from Rudayna Abdo who has written about her project Thaki, a startup NGO whose mission is to empower refugees and disadvantaged children in Lebanon, by providing them with the technology they need to access education. Next, Drs. Alaei, two brothers, physicians and human rights activists who themselves...
are refugees in the United States, present the story of their project (developed with support of the University of Albany), which helps to provide accredited medical education for displaced students. Then, representing a European response, Carsten Walbiner presents the project HOPES (Higher and Further Opportunities and Perspectives for Syrians) which is coordinated by the German Academic Exchange Service (DAAD). HOPES aims at improving access for Syrian refugees to higher education in their countries of asylum in the Near East and Turkey. Our final contribution comes from Mohammad Salman and Luc Deschouwer who presents the “Welcome Student-Refugee programme” of Vrije Universiteit of Brussels. This initiative has garnered a lot of attention for enrolling refugee students in an effort for universities to lead the response to the refugee crisis.

Thank you for taking the time to read this publication. In this volume, while we concentrate on Syria, it is important not to forget that other countries in the Middle-East stuck in similar situations, could also benefit from education solutions similar to these mentioned here. Furthermore, there are many other deserving projects which we haven’t been able to include in this collection, but we hope that you will find the ones we have inspiring. In case you would like to let us know of other projects, or reach out to us, you can contact us at the following addresses:

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Dr. Vera Sheridan has had a long career in education which spans the theory and practice of education in diverse settings in Europe, the Middle East and Southern Africa. She is a Fellow of the Higher Education Academy in the UK. She researches identity across educational, organisational and national settings and has published widely in the field of migration. Her contributions to international scholarship include historical and contemporary perspectives on the education of refugees, namely young Hungarian refugees seeking scholarships in the USA in 1956 and mature refugee students in higher education in Ireland. She has also written about her own experience of being a child refugee and the resurgence of that identity in relation to contemporary discourses and vilification of people seeking asylum.

NRV: Can you tell us a little about your journey from being a child refugee from Hungary to becoming a prominent academic in Dublin?

In some ways it’s an unthinkable journey as I come from a small village in Hungary and when I returned to Hungary in the 1970s to visit my grandmother I realised how narrow my life’s possibilities would have been had I grown up there. When I looked around the village where I had drunk water from the well and remembered the frog jumping out of the bucket one summer, I did not see many possible futures for myself. Perhaps I could have risen to the dizzy heights of being a secretary to a local party functionary; alternatively, perhaps I could have worked in the local cafe. My mother did have plans to go and live in Budapest with my great-aunt so that I could go to school there. But those dreams were never realised as it was 1956 and in October the revolution began. The revolution was brief, bloody and reprisals followed. My mother was one of the many thousands who fled to Austria as refugees. She had not wanted to leave but the ferocity of the reprisals made her fearful and she was lucky enough to get across the border at that late stage.

In Austria my mother paid a man with her jewellery to return to Hungary and smuggle me out. In Hungary my grandmother made the decision to let me go, something I only learnt in the 1970s when I returned to visit her. So much could have gone wrong but luckily, even though we were some 10 days late, my mother waited, and waited, and we were reunited. At first we were in a small refugee camp near the border which was not so bad but then we were moved to Traiskirchen, a large camp near Vienna where eventually I stopped eating as I wanted to go home to my grandmother, to her kitchen where it was safe and warm and where I was loved. By this time many countries had taken their quota of Hungarian refugees so that my mother had the choice of remaining in Europe by going to England or going further afield such as to America or Australia. She chose England and we began our journey by boarding a bus in Austria followed by a long train journey to Belgium and the sea crossing to England. I was terrified on deck when my mother let me look down at all the water surging around us.

In England there was another refugee camp where refugees stayed until they found work and could move out to start their new lives. People in England had also been asked to offer accommodation to refugees so we went to live with Mr. and Mrs. Stokes whose own children had emigrated to Australia. We paid rent and Mrs. Stokes was very kind to me. My mother learnt a great deal about life in England from Mrs. Stokes, especially education, because my mother said that starting life in England was like going to the moon because everything was different: English people even counted differently. My first day in English school did not begin auspiciously as I was placed in a class of children younger than me so that the chair I sat on was too small and the table was too low for me. However, that changed immediately and I began to go to school to sit there and listen as,
apart from myself, everyone spoke English. I remember not speaking English, trying it out and getting it wrong and finally becoming the fluent speaker that I now am. As English became my first language and I became literate in school I more or less lost my original language, Hungarian (but not completely, Hungarian has never lost its hold on me). School, however, was a refuge from poverty and the regularity and routine also provided a buffer between myself and my parents who had their own problems as they too tried to make their way in the new country with no resources. School was the place where I became self-reliant. School was the place where I learnt, where I found books to read and could imagine and dream. And school was also the place where my parents encouraged me to be as there was no going back to Hungary and school, school was the place for going forward and not backwards.

My teachers were mindful of me and I jumped class twice which meant I could sit the 11+ exam at the right age. This examination was crucial as it set out the path to university and in my primary school five of us passed and I was the only girl. I went to grammar school, a progressive co-educational school which was blessed with an excellent library where I spent a great deal of time. Our final two years in school were a time of freedom as we had our own common room and our days were a combination of formal classes and autonomous learning. This was great preparation for taking the step towards being at university though I had a year between the two. After working university life was most pleasurable, especially as work consisted of reading, thinking, discussing and writing. At university I also learnt a sense of self-worth and pride in my cultural origins as my lecturers had some connections to Hungary. One had taught himself Hungarian and translated poetry and another was a scholar of Finno-Ugrian languages, specialising in Komi, a language which is now extinct. This is an important point as I did not know what to make of where I came from and all the violent things which had happened and which propelled some 200,000 people to flee the country. Being a child as a refugee does not mean that everything passes one by and I was 24 by the time I could have a coat hanging from a hook on my bedroom door and fall asleep with no concern for that shadow lurking there in the dark.

After I graduated I wanted to do a Ph.D. but did not obtain a grant and began to work which was probably a good thing as I could bring my life’s experience to my later academic work. I trained to teach English and after a few years I began to work abroad, firstly in Malta, briefly in Syria and then in Zimbabwe. In Syria I was part of an EEC project between the London polytechnic I worked for and the faculty of engineering at the University in Damascus. This was in 1983, at a time of some uncertainty as there was a war in Lebanon and in Syria there had been a revolt in Homs. Damascus at times seemed to be full of soldiers, and at other times there was the sound gunfire late at night. My time in Damascus was mixed with the surreal, which related to all those internal and geopolitical tensions, mixed with the friendship of staff and students, not to mention the wonderful food, the trip to the amphitheatre in Basra organised by our students who showed us one of Syria’s treasures and the richness of its cultural inheritance. I also went to Aleppo as part of my job and marvelled at the Citadel or rather the extraordinary causeway leading up to its gate. As for Palmyra, well, I left that for another time…

A return to academic life came later when I settled in Ireland with my family though learning to live in yet another culture was not easy. Fortunately, I was able to combine work and studying part-time for an MPhil after which I received a scholarship to pursue my Ph.D. which was on Vietnamese refugees in Ireland. Consequently, my life in academia has been fairly short but I have striven to do as much as possible in that time.

NRV: From our point of view, education is not just a catalyst to finding a job, but it is also a lifeline that can help those in vulnerable situations. What are your thoughts on the importance of education lifelines for Syrian refugees around the world?

Firstly, if you participate in some form of education, as a refugee you are no longer alone (there are precedents with regard to refugees whose education has been disrupted as this happened to
some 8,000 Hungarian students in 1956). Having a common sense of purpose with others pursuing the same goals provides refuge from daily stresses if you are in a camp or going through an asylum process. You are in limbo and also no doubt facing all sorts of pressures as ‘normal’ life and ‘normal’ expectations are disrupted and with no end in sight to that disruption. In families, for instance, education can bring relief to parents who have their own stresses to deal with as they know that their children are engaged in a meaningful activity. Conversely, parents or other adults may find relief from everyday tensions by participating in an educational opportunity. There is no problem sitting alongside younger peers; after all, in Europe we call this widening participation and lifelong learning.

Education can be an escape from all those pressures by providing a breathing space but it only becomes true escape when a good opportunity presents itself and seen all the way through to the end. To be able to say that ‘I have completed X course while I am in Y place’ can make you feel good about yourself, provide a sense of accomplishment, ‘I did that’ and, importantly, a sense of self-worth at a time of trouble and doubt. Thinking a little bit ahead, it also provides evidence for anyone considering applying for university scholarships. Completing a course or a number of courses demonstrates determination, commitment and proven ability to see an educational project through to the end in circumstances which are hardly ideal. That is useful information for anyone evaluating a scholarship application. And, as an older student, this may be a time to try something new or something that you always wanted to do if that opportunity arises.

NRV: Moving away from the individual level, what role can education, and academia more generally, play in providing solutions for the Syria crisis?

I think this is rather a complex question. Taking academia first, there are specialists who can contribute their knowledge and expertise on Syrian affairs but of course it is political power which will eventually settle the crisis. Even so, education can play a role in several ways. Firstly, people need to be educated about the crisis so that they can make sense of what is happening with regard to refugees. Only then can they truly make informed decisions not only about Syrian refugees in their own countries but also how they can contribute towards alleviating the humanitarian issues that we see every day on our TV screens. Academics have the potential to make a strong contribution by speaking out in relation to popular myth or a government’s policy stance through pointing towards evidence-based research. Such research stands in contrast to vague statements about ‘something I heard’ or, even worse, ‘something I feel is true’ when there is not a shred of evidence for it.

NRV: Young Syrian refugees who have fled to countries in the Middle East face huge barriers in terms of accessing higher education. Linguistic and financial difficulties are two of the biggest obstacles that they face. Another barrier that they face, and one that is given less attention, is the culture barrier. Can you explain for the readers how such a barrier affects students in higher education and perhaps offer some solutions that we as academics can employ to ease their transition to studying in a new culture?

I think there are two aspects to this question: one for students and one for higher level institutions. Firstly, with regard to students, I would consider some form of preparation is necessary before embarking on a course of study, and ideally on arrival in the new culture. I say this as in my own research a student might say that they need to get to know ‘the system’ as what is expected can be very different from what they have experienced before. And here I’m speaking of the culture of a university which expects certain things from its students and very often these things are not made explicit but are assumed. For instance, it can be very daunting for a student who is used to sitting a formal timed examination as their main form of assessment to be given a written assignment of some 3000 words which is then assessed as a discursive essay which engages an argument. A student may never have written such an assignment before and is faced with the prospect of wondering what exactly is supposed to go into it, what to research and how to research and how to
put it all together into the written assignment. And this is where the university comes in: is there a culture of making things explicit, in other words engaging with academic literacies, the term given for how things are done? If not, then how are our students helped to make the transition from one system to another?

Cultural barriers can be complicated as again it depends what one is used to. For example, if all your teachers have been men then it can be a surprise to have a young woman stand front of a class to teach it. For instance, as a young, committed, well-prepared professional I delivered what I considered to be an exemplary introduction to the material we were going to study in my first class with a group of young men. I thought the introduction was exceptional as it was clear, to the point, brief and leaving plenty of time for students to work independently. ‘Any questions?’ I asked. The students looked at me in silence. There’s something wrong here I thought. So ‘what’s wrong?’ I asked and they answered ‘We’ve only been here for two days and we’ve only been taught by men before’. ‘Well,’ I said, ‘then we had better introduce ourselves’. We had to find the point where both sides could meet to mutual effect. Only then could learning take place. Now that’s only a story but it does illustrate the importance of cultural matters. As academics we also need to prepare so that we have knowledge of the culture that our students come from. Importantly, we also need to weave that knowledge into our classes so that students understand that what they come with is valued. This validation increases self-worth, opens up trust and meaningful communication.

NRV: The issue of teacher training is gaining prominence in education for development circles as key to providing more and better higher education opportunities for refugee populations around the world. When designing and implementing teacher training programmes what are some of the key issues that development facilitators need to become more aware of?

I think it’s important to have knowledge of the education system that people come from as clear differences will emerge between that system and the system that development facilitators may come from. Not all the differences will matter, some will actually be helpful and some may need to be highlighted and discussed. Openly acknowledging the important differences serves as a form of validation for each. I would consider this to be vital as it creates mutual respect and understanding. Such knowledge will also impact on the programme created by development facilitators as they become aware of the education experiences of their potential students which will be brought into the classroom. For instance, in some cultures people may marry early but still continue with higher level education at a later stage. Students will then be a little older and will also have families; the provision of childcare will be part of the educational system so that young married women can complete a university course. Knowing about and acknowledging the ‘normality’ of this situation creates the possibility of mutual respect and of being able to listen and learn from each other.
Higher Education for Post-conflict Syria: The STEM Imperative

Dr. Mohamed Najib Abdul Wahed

As a post-conflict country, Syria with its higher education institutions will need to be able to develop good quality graduates in Science, Technology, Engineering and Mathematics (STEM) fields who can contribute to reconstruction, development and the establishment of lasting peace and stability. The reality is that, in spite of their resilience and struggle for survival, national higher education institutions affected by conflict and violence will not be able to provide all the required good quality education to the population.

There is nothing more vital than having a resilient quality higher education (HE) system to contribute to rebuilding a war-torn country like Syria. Although rebuilding higher education systems and institutions is not yet a major priority in post-conflict planning, it is highly recognized that providing appropriate HE can contribute to an effective recovery, peace-building, economic development and democratic transformation. By meeting the increased demand for skilled workers in STEM fields at all society’s levels where deskilling as a result of lost job opportunities or displacement becomes critical, HE will provide the war-torn society with the opportunity to own the rebuilding and reconstruction process and, most importantly, will hold national and international reconstruction actors to account. All these factors will help avoid a similar failure to that experienced previously in post-conflicts like Iraq and Afghanistan, where the skills and capacity gap have been highly acknowledged.

Furthermore, in wars and crisis such as the Syrian one, the aftermath can bring about an opportunity to reform and realize improvements during rebuilding, rather than merely restoring flawed systems. The starting point for exploiting such an opportunity and giving rise to real reform for the HE system must be a better understanding of its dynamics and resilience demonstrated by academic communities before and throughout the conflict.

Syrian Educational Dynamics

Syria had a long history of striving and struggling to ensure appropriate numbers of graduates in science and engineering fields came through its higher education system. In the mid-1980s the Syrian government, in an effort to build the required capacity and infrastructure for the national economy and prepare the people to cope with the growing challenges of the globalizing market, actively increased higher education opportunities. As a result, the higher education system experienced a transformation toward a mass form (the so-called policy of Isti’ab which means full enrolment for all higher education seekers). This massification of higher education provided more and more access to tertiary education and subsequently produced, according to some related indicators mentioned in the 2007 – 2008 Global Competitiveness Report, a growing number of graduates to help transform the country with its developmental priorities in an era marked by the centrality of the state in the development process.

During the 1980s Syria realized the highest range of science and engineering graduates in the Middle East when approximately 0.5% of the total population in the country were enrolled in technical disciplines, making Syria a regional platform of scientific and engineering training.

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according to UNDP’s Syria Human Development Report. However, when it came to the internal and external efficiencies (quality of education and its social benefit in the labour market) in the long term, the education system achieved only modest rates. In fact, Syrian students in scientific disciplines began, soon after the dawn of the 21st century, to doubt the effect of massification for improving their competitiveness in the job market. This doubt can simply be illustrated from the evolution of the number of potential seekers of higher education and their relative choices between scientific and literary disciplines, expressed by the number of winners in the national Baccalaureate exam as shown on the chart below.

Chart-1. Syria. Potential seekers of HE based on Number of winners of Baccalaureate, 1999-2016

In Chart-1, a sustainable rise in the literary branch to the detriment of the scientific one can be observed, resulting in a period of crisis named “scientific desertification”. Despite the complexity of such a phenomenon and the bifurcation of its roots on the social and economic level, it clearly reflects the fact of being a way of “rebellion” against the admission criteria which rely on the pass record in the baccalaureate, which in turn depends on memorization and rote learning. It is also a direct consequence of a growing structural skills gap between the preparation provided by HE and an ambiguous job market incapable of absorbing scientific graduates. However, the phenomenon started decreasing from 2008 following some reform policies, such as heading more toward secondary vocational education, diversifying scientific programs in universities, creating more scientific job opportunities and establishing career development centres inside the universities, together with starting a program of entrepreneurship training.

Sadly, with the eruption of the conflict in 2011, disruption started to powerfully affect the entire educational landscape. This disruption manifested a massive “re-rush” toward the literary branch following a series of reforms granted to students soon after the eruption of the conflict, giving them the opportunity to apply again for an additional second round of exams in August of the same year. The first two years of the crisis thus witnessed a re-widening and re-deepening of the gap between scientific and literary before being reversed starting from the year 2014. This “lucky” reversal was due to the sharp drop in the total number of students due to the propagation of the armed conflict resulting in the largest tragedy of external and internal displacement of people since World War II, not to mention the severe destruction to the educational properties and brain drain. On a positive note, there may be some hope for potential STEM seekers, in the thousands of potential students who are displaced in surrounding countries like Turkey, Lebanon, and Jordan, or in places as far away like Europe and America, who are looking forward to having some opportunities to gain true STEM education.
Future Ambitions

Unambiguously, for Syria to be rebuilt, stand up economically and realize its potential for innovation, we will need an appropriately skilled workforce; one that is skilled in science, technology, engineering and mathematics (STEM) as we will be living and competing in a global economy driven by data, digital technologies and innovation. Rebuilding does not need just more engineers, it needs a new kind of engineers; a kind that is able to add significantly more value than their old counterparts through their greater intellectual span, their capacity to innovate, their entrepreneurial fervour and their ability to address the grand challenges of reconstruction. Consequently, the broad skills and qualifications that STEM fosters today will be greatly needed and can create a strong response to rebuilding needs. Systems-level thinking, problem finding and solving, imagination and team spirit are but a few.

STEM education is nowadays a crucial issue in current educational trends. Several countries are rushing to provide students with quality, STEM training needed to succeed in their ambitious development plans. Chart-2 projects share of graduates with STEM degrees across OECD and G20 countries.


![Chart-2](image.png)


STEM is a curriculum based on the idea of educating students in four specific disciplines — science, technology, engineering and mathematics — in an interdisciplinary and applied approach. Rather than teach the four disciplines as separate and discrete subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications. Research shows that integrative approaches improve students’ interest and learning in STEM. What distinguishes STEM from the traditional science and math education is also the blended learning environment and showing students how the scientific method can be applied to everyday life. It teaches students computational thinking and focuses on the real world applications of problem solving. It must be noted, however, that appropriate STEM education begins while students are very young. This implies that our whole education systems must adjust to the new requirements. We need primary, secondary, and tertiary educations aligned with those needs.
The Way Forward

In the aftermath of violent conflict, rebuilding and reforming the higher education system and institutions aiming at developing a workforce capable to rebuild the Syrian economy in a context where funding and capacity are limited, is highly challenging and demands the right culture and people. It also requires substantial changes and long-term commitment and strategy. The ultimate objectives of such a strategy should stem from the fact that success depends more on having the right skills than the right qualifications and that the delivered education should spark students’ curiosity and instils in them a passion and love of learning. In our ever-changing employment landscape, employability is less about what you already know and more about your capacity to learn (learnability) in order to develop in-demand skills. We need to start building HE institutions that think horizontally, beyond conventional silos and sectors: institutions that create STEM interdisciplinary programs which foster entrepreneurship, agility, cultural sensitivity and productivity.

In the short term, we will inevitably need to focus on external assistance through international cooperation which, in many cases, will have to be delivered by external organizations and universities in the form of educational programs and expertise. The challenge now is capacity building; for educators and academics to complement their teaching of technical skills like mathematics and computer science, with a focus on STEM mindset, making sure the workers of the future have the soft skills to compete in the new job market. As a nation, we should thus act on the imperative to develop a new generation of STEM-savvy Syrian workers who have the skills, passion and know-how to address this critical issue. Syrian academics in exile as well as the Syrian knowledge diaspora in the US and Europe should be involved to getting there and contributing to building the required critical mass of teachers to light the fire using their international knowledge, experience, perspectives and competence that they have developed through their international travel, teaching and research experience.

Finally, it is important to note that STEM jobs do not all require higher education or even a college degree. Statistics project that less than half of entry-level STEM jobs require a bachelor's degree or higher. Thus, vocational training and education (including community colleges) through new platforms should be encouraged. Unfortunately, the common perception in our region is that you need a university degree to obtain a rewarding career. Consequently, parents are increasingly pushing students to attend university, even when they know that university is not the right choice for many young people. As a result, tens of thousands of students every year drop out or graduate without the skills they need to obtain a job. The focus on university has contributed, in some respects, to creating a skills shortage across the country. In post-conflict Syria, we must also encourage growth in STEM-oriented middle-skilled jobs, which will create new workforce opportunities for all.
Interview with Dr. Mohamed Najib Abdul Wahed

Mr. Mohamed Najib Abdul Wahed is Professor of mechanical engineering and also former Deputy Minister for Scientific Research and Academic Affairs at the Syrian Ministry of Higher Education. He is an expert in higher education, research and innovation. He also contributes to several international projects aiming to assist in the recovery of Syria.

NRV: Can you tell us a little about your current situation?
After retiring from my original position as Professor of mechanical engineering at the University of Aleppo in 2013, I moved to Lyon, France – the city where I did my doctorate studies during the 1970s at the “INSA de Lyon”. Currently I do some work as an independent consultant in higher education, research and innovation. My interest and preoccupation comes from my conviction that higher education is a strong catalyst for development, social cohesion and peacebuilding. Thus, my main areas of expertise focuses on ways of providing appropriate higher education to Syrian refugees and asylum seekers, and ways of rebuilding a national higher education system that can contribute to effective recovery, peacebuilding and economic development. In that context I worked with the United Nations Economic and Social Commission for Western Asia (ESCWA) as a freelance expert for the project “National Agenda for the Future of Syria” (NAFS), in charge of developing the future short & long-term reform policies regarding higher education, research and innovation systems for the “New Syria”. Also, I am member of the Board of Trustees of the Syrian Virtual University (SVU) since 2008.

NRV: What is the current situation of the STEM field in Syria?
In fact, the crisis caused heavy losses in the scientific and academic capital in the country. Severe destruction to the educational properties and brain drain caused negative impact on STEM situation nationwide. However, despite this disruption, there is, inside the country, a strong recognition and determination among the Syrian government and political leadership, to put STEM in the spotlight as never before. This has been emphasised in all educational levels by the launch of several flagship initiatives aiming at reinvigorating interest in STEM subjects, as well as rebuilding a pipeline of talents in science and technology. The most important of these initiatives, on the basic and secondary education levels has been the National Commission for the Syrian Science Olympiad aiming at encouraging and motivating greater number of talented students in the community and seeking to develop the spirit of scientific research and innovation. These competitions cover the subjects of mathematics, physics, chemistry, IT, and biology. The number of participants are growing each year. Last year, in the run-up to the finals, more than 45,000 students from all provinces competed in all school levels. This year the finals are expected to be held soon. The winners then qualify to take part in the international Olympiads to be held next July in Brazil, Indonesia, Thailand, Iran, and the UK. In 2015, the Syrian Science Olympiad student teams won 4 medals and 5 certificates of appreciation in chemistry, physics, mathematics, and informatics in international competitions (61 achievements during the past 5 years).

The World Robot Olympiad (WRO) represents the second flagship initiative related to STEM. In this robotics competition for students from elementary to high school, Syria is officially represented in WRO by a Syrian NGO, the Syrian Computer Society (SCS), who has officially
gained membership and authorization to organize local competitions and participate in international competitions. In November 2014, Syria reached the finals of the 11th World Robot Olympiad held in the Russian city of Sochi, coming in 5th place (after competing with 400 teams from 47 countries) while in November 2016, a Syrian team won the second place in the World Robot Olympiad held in the Indian Capital, New Delhi.

The National Center for Distinguished Students is another flagship project aiming at attracting creative young people and providing them with special secondary, university graduate and postgraduate education. Four academic programs specially tailored to high caliber students were established: medical biology and laser sciences hosted by Damascus University, informatics engineering hosted by the Higher Institute for Applied Science and Technology (HIAST) and mechatronics engineering hosted by Tishreen University in Latakiah. The impact from all these initiatives has been great: students nowadays are becoming increasingly interested in STEM fields, so instilling an interest at an early age could spark a lasting desire to pursue a career in any of these fields. That is why the National commission for the Syrian Science Olympiad and the National Center for Distinguished Students have recently been unified under the “Commission for Distinction and Creativity”. This newly established board under the Law n.11 of 2016 aims at developing and managing the national intellectual capital by pushing forward the aforementioned pioneering national projects.

NRV: How do you imagine Syria in the future? What can be done to re-build the country successfully?

Well, I cannot imagine Syria other than a unified country whose society is capable of rebuilding it and achieving comprehensive development, a country where public institutions are run by the principles of good governance, a country that seeks to achieve recovery and reconstruction of the infrastructure to generate knowledge, creativity and innovation. This cannot be achieved without hopefully reaching a peaceful resolution of the conflict, full eradication of terrorism and voluntary, safe and dignified return of the displaced Syrian people; such return will lead to the rehabilitation of the Syrian human capital towards achieving the long term development of the country. The priority should be given to national reconciliation, rebuilding the culture of peace, reinforcing the value of solidarity to achieve social cohesion and finally, good management of diversity relying on the concept of citizenship, and on the common values of the Syrian society. The role and contribution of higher education, particularly in STEM fields, in all these processes will certainly be primordial.

NRV: Do you think that distance education programs can be successful in educating the current generation of Syrians in need of higher education?

Yes, certainly; distance online education would provide much better value and be of low-cost and wide-access approach. In war-torn Syria, it could benefit students who at the moment are rich in talent and poor in opportunities. In Syria, we already have a successful pioneering experience, the Syrian Virtual University (SVU). Operational since 2003, this online university proved successful in delivering higher education to many Syrian students who were in difficult circumstances during the years of the conflict, whether they were within the conflict zones inside Syria or refugees in the neighbouring countries where access centres have been opened in Turkey, Lebanon, Jordan and the Gulf States. Furthermore, I think the other model widely used by several organizations since 2011 and offering online higher education to refugees anywhere, anytime, could be used to provide quality and massive higher education to the current Syrian generation in need of higher education. This model uses blended learning approach combining online learning through webinars and the Massive Open Online Courses (MOOCs), with the required on-site tutoring and mentoring. By partnering with foreign/national universities, such programs could be able to offer accredited certificates, diplomas and degrees. However, we should be aware that online education is not an easy option. It is not for everyone. It requires extremely high motivation and self-
discipline: you work full time and then you have to study for hours at home. Furthermore, online education in post conflict areas poses a big challenge, as with all ICT for education initiatives, the need for reliable infrastructure –electricity, sufficient computers, access to Internet – is a basic requirement and limits not only how extensively these programs can be scaled up, but also their accessibility to the isolated learners.

**NRV: In your article you underline the importance of building horizontal institutions? What do you mean by that and how can that be achieved?**

Well, what I mean is rather the horizontal thinking of the institution. As you know, each higher education institution has a training intentionality that is described in the curricular unit forms, which constitute the study plan of current educational programs. These are rigorously focused on vertical competences, associated to the scientific area of the program, but they also include horizontal skills, that contribute to empower the student with a broader set of knowledge and abilities. In effect, in current curriculums of higher education degrees there should be an important dose of specific traits such as leadership, optimism, perseverance, passion, resilience, creativity, empathy and others. Although not usually considered as explicit competences in the curriculum of higher education degrees, these horizontal personality ‘traits’ more easily found in entrepreneurial individuals can be strengthened, and skills can be learned either directly or by specifying horizontal competences in higher education programs. Thus, in higher education institutions, horizontal thinking, once adopted and reinforced, would be very helpful to creating STEM interdisciplinary programs which foster entrepreneurship, agility, cultural sensitivity and productivity.

**NRV: You talk also about the importance of external assistance. Is it possible that Syria avoids becoming an export country of the scientific products/labour force?**

As you know, brain drain is taking place at a very fast rate in developing countries; Syria being no exception, even before the crisis. During the crisis, brain drain was seen in the massive migration of qualified people. If we want to retrieve our lost human capital and avoid being an export country, we will have to provide better job opportunities, promote people on merit alone, provide attractive salaries to highly qualified people on the basis of their qualifications and experience, improve the quality of our universities and provide adequate research facilities. Nevertheless, we actually live in an era of mobility where the opening up of international borders for goods and labour is accompanied by a linguistic shift from ‘brain drain’ to ‘professional mobility’ or ‘brain circulation’. Easier solutions could therefore be based on this wider perspective, interrelating human capital imbalances between, but also within developing and developed countries. In this perspective, our expatriate scientists and Syrian Knowledge Diaspora abroad can contribute their knowledge, experience and research skills to their native country by developing collaborative training programs, research projects and teaching their own countrymen. Our scientists, political leaders and decision-makers, as well as international development agencies, need to appreciate and facilitate such models of knowledge sharing so that policies and education systems are designed to promote and enable knowledge transfer, research and development.
The Private Sector and Education of Syrian Refugees in the Middle East

Lorraine Charles

The Syrian refugee crisis has had a significant effect on the most vulnerable: children and youth. While basic humanitarian needs of food and shelter are met by host countries, many are losing the right to education and the opportunity for a productive future. It is estimated that there are approximately three million Syrian children and young people (including those in Syria) without access to education (UN, 2016). In the Middle East host countries, 739,000 (48%) of school-aged Syrian children are not in education (3RP, 2016). With thousands still fleeing the violence in Syria, this number is likely to increase.

These figures are alarming not only because of sheer absolute numbers, but also because this is a significant setback in educational achievement for Syrians. Prior to the uprisings, Syria boasted high education enrolments rates for both males and females, combined with high literacy rates. Primary enrolment was 92% for females 97% for males and there was equal secondary enrolment for both genders (70%). Tertiary education enrolment was 12% for females and 17% for males. The overall literacy rate was estimated to be 86% (UNDP, 2011). However, the current conflict in Syria has dramatically altered this situation. Syria has suffered “the largest reversal of educational progress ever recorded” and currently has “the second worst enrolment rates in the world” (DFID, 2015).

The international community has had limited success in addressing the urgent need for education, due mainly to lack of financing. The Regional Refugee and Resilience Response Plan (3RP, 2016), the coordinated regional response to the Syrian refugee crisis, reported in December 2016 that of the USD $662 million that was required to fund education across refugee hosting countries (Egypt, Iraq, Jordan, Lebanon and Turkey), only $366 million (55 percent) had been received.

With displaced Syrian children and youth being denied access to education, the need for a long-term strategy to address the educational needs of the growing number of refugee children has become urgent. UN bodies, non-governmental organizations (NGOs) and international non-governmental organization (INGOs) have had limited success at finding solutions for access to education, and are struggling to address the increasing need. The private sector has significant potential to fill this void in support of host governments and the international community, not only as a potential source of the much needed financing, but also through its core assets, expertise, innovation, and leadership.

The private sector’s concern with education is multifaceted. Apart from acting because it is the “right thing to do,” there is a business case for investment in education. The growth of the private sector is closely linked to economic growth, and this is influenced by the education level of the population. Providing more education, knowledge and skills to individuals will increase individual productivity and employability, which in turn increases the overall income and growth of the economy. Research has also shown that education is a driver of economic growth. For each additional year of education there is an increase of between 13% and 35% GDP per capita and every $1 spent on education yields $10 to $15 in economic growth over a person’s lifetime in the

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form of higher earnings and wages. This means increased profits for the private sector through greater productivity and skills of potential employees, as well as increased sales revenues with stronger markets. Education is also linked to increases in individual wages, and this translates to societies with more disposable income for goods and services, and hence private sector growth. Therefore, private sector investment in education can contribute to the development of skilled workforces and guarantee future markets based on perceived future business needs.

The private sector can be a dynamic player where traditional actors have struggled to meet the educational needs of displaced children and youth. It is able to respond quickly, and can mobilize significant resources quicker than governments and the UN agencies, both of which have been repeatedly criticized for having complicated, lengthy and cumbersome procedures. Businesses can also use their technical expertise, technological solutions, employee networks and political influence. Because of the private sector’s market driven approach, innovation, creativity and ingenuity, it can address humanitarian issues from an alternative perspective, utilizing business models to achieve more impactful results.

The private sector has stepped up to the challenge of addressing the educational needs of Syrian children and youth. It has provided much-needed funding for education programs. Pearson Education has partnered with Save the Children to invest over £1.5 million for the education of Syrian refugees and vulnerable Jordanian students. Telnor ASA, the Norwegian telecommunications company, has donated £80,000 to UNICEF for education in Jordan. Visa Europe has donated £1 million to Save the Children for their work with refugees, while Visa Poland donated over £75,000 for refugee children in Turkey. Johnson & Johnson has committed £1.4 million for refugees in Turkey and Egypt. Google and Western Union financing have also committed toward the education effort for refugees.

Apart from the provision of funds, the private sector has utilized its core assets to provide solutions to address challenges faced by education systems. The numbers of Syrians entering the education system has placed a strain on infrastructure. Not only are there insufficient schools to host the number of refugee, but also existing school buildings are inadequate to cope with increased demand. Multinational construction company Arup has pledged to advise the Lebanese Minister of Education about school infrastructure, providing advice about construction of new schools as well as maintenance and expansion of existing schools buildings.

Increasing human capacity is one of the main issues faced by education systems in host countries. Teachers are not prepared for the increase in numbers of students or special needs that are encountered in the classroom. Informal education centres often lack teachers with the necessary qualifications and skills to address the needs of students. To contribute to addressing this need, Laureate International Universities has partnered with a Lebanese NGO to run a training program for Syrian teachers. Teachers receive English language skills training, as well as pedagogical training to teach English, with the potential for formal accreditation.

There is no doubt that private sector partnerships with NGOs working on the ground provide a good model for sustainable and impactful solutions. An example of this type of partnership is Kiron, the German social enterprise, which provides free university education to refugees regardless of their legal status or financial situation. Its partnership with Deutsche Bank and Ernst and Young for technical expertise, and BMW, Google, Thyssen Krupp and Bertelsmann for financing has created a model that is not only meaningful, but also scalable and sustainable.

Many children fleeing the conflict in Syria have missed months or even years of schooling. Language barriers, present in Lebanon and Turkey, and differences in curricula place an additional

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5 For a detailed example of the Private Sector’s commitments to the Syrian crisis, including education see Private Sector Participants to the Call to Action https://www.whitehouse.gov/the-press-office/2016/09/20/private-sector-participants-call-action
burden. To address this need and to complement the Accelerated Learning Programs instituted by host country governments, the Speed School Fund, created by Legatum Limited, has committed to establish an accelerated learning program to enable children displaced by the crisis in Syria to get children back into school in age appropriate grades.

These private sector initiatives discussed above are by no means exhaustive, but provide an example of how businesses have engaged in education initiatives, and should provide a model to urge and inspire others to act before it is too late. Commitment by companies also sends a message to donor governments that they must do more to provide for the needs of ever-increasing refugee populations, including access to education.

Yet despite the great potential and the significant contributions that have been made, private sector engagement involving education in emergencies is relatively recent and comparatively limited. The call to action by the Leaders' Summit on Refugees, hosted by President Obama, and organisations such as the Global Business Coalition for Education\(^6\) have brought attention to the need for an increasingly multifaceted response to education in emergencies and commitment by the private sector to step forward. Since the start of the Syrian crisis, businesses have been engaged in providing their core assets in addition to traditional funding to support Syrian refugee children and youth, as well as the most vulnerable members of host communities.

The international community has begun to realize the necessity of the inclusion of other actors in the education in emergencies space. An encouraging sign of a shifting response is Education Cannot Wait: A Fund for Education in Emergencies\(^7\), launched at the World Humanitarian Summit in May 2016. The new Fund seeks to better coordinate responses to provide education to children and adolescents trapped in emergencies and protracted crises and to mobilize new and additional funds by engaging non-traditional donors — including the private sector.

The Syrian crisis has created an environment where the long-term benefits of education have been overshadowed by the immediate need to survive. The future reconstruction of Syria requires an educated and skilled populace. All efforts must be made to ensure that this generation is equipped for the difficult task that lies ahead.

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\(^7\) See Education Cannot Wait: http://www.educationcannotwait.org/
Interview with Lorraine Charles

Lorraine Charles is a researcher focusing on politics, political economy, development, education and livelihoods in the Middle East, with over 12 years’ experience in the region. She has worked on issues related to the Syrian crisis since 2011. She is an Associate at Angela M. Solomon Communications and Director of Social Enterprise for Pale Blue Dot Life, a non-profit organisation established to support vulnerable populations in regaining economic independence. Previously, she was a research and policy consultant for the Global Business Coalition for Education, where her work focused on the engagement of the private sector in education for Syrian children in Jordan, Lebanon and Turkey. Her research currently focuses on sustainable solutions for livelihoods and education for refugees. She has also worked in the education sector in the GCC® and also on education, development and monitoring and evaluation projects in the Middle East. She is a PhD candidate in Middle East Politics at the Institute of Arab and Islamic Studies at the University of Exeter.

NRV: Can you tell us a little about yourself and your efforts to promote durable solutions to the education crisis for Syrian refugees?

I have been working on issues related to Syrian refugees since the start of the crisis in 2011 when my work mainly focused on research around the issues of education and gender, and I published academically on this. I began working for the Global Business Coalition for Education (GBC-Education) in 2015 where I liaised between the private sector, the international community (e.g. INGOs and the UN) and civil society (e.g. NGOs and social enterprises) to address education for Syrian refugees in Jordan, Lebanon and Turkey. I established partnerships between these different entities to address barriers to quality education and also sought commitments from the private sector – both financial and via the utilization of their core assets – toward GBC-Education’s target of getting one million Syrian children into education. I also conducted research and subsequently wrote a report examining the role of the private sector in the Syrian education response. Examination of the education response highlighted a major gap: employment opportunities. I believe that while quality education is important, without the opportunity to translate this into dignified livelihoods, education is somewhat irrelevant. The announcement of the right for Syrians to work in Jordan and Turkey spurred me to further examine issues around employment and, in particular, education for employment. I conducted a research project for the Emirates Diplomatic Academy, an independent federal entity under the UAE Ministry of Foreign Affairs, examining issues around employment for Syrians in Jordan and Turkey. This study included the importance of education for economic independence. I am currently Social Enterprise Director for an organisation called Pale Blue Dot Life that will establish livelihoods and education projects for Syrian refugees in the Middle East. I also work on other education projects, the most recent being the creation of evaluation tools for the monitoring and evaluation of the Lebanese education system.

NRV: In your view, is the private sector pulling its weight when it comes to providing education solutions for the Syrian crisis? Should it be doing more than it is? Why should private business be concerned with it?

The private sector has stepped up to the challenge. The momentum created by the Global Business Coalition for Education followed by President Obama’s Leaders’ Summit on Refugees has

8 Gulf Cooperation Council
propelled the actions of the private sector to the spotlight. The generous commitments by individuals such as George Soros of Soros Fund Management and Hamdi Ulukaya of Chobani provide strong examples for the business community. But it’s not just the high profile commitments that make an impact; many other organisations are also making significant contributions. A look at the list of organisations who have signed to assist refugees at Obama’s conference and through announcements made by GBC-Education show the willingness of the private sector.

Of course, more can be done. The extent of the crisis is huge and the need is great. While many companies in the Middle East are making significant contributions, I think greater engagement by businesses in the region is needed. More importantly, a coordinated effort between UN agencies, INGOs, NGOs, the private sector and governments is required to address the crisis.

NRV: Do you think the NGO sector would embrace more involvement from the private sector in regards to education provision for Syrian refugees, or would it see it as a threat?

I think the NGO sector has seen the value of the private sector in regards to education provision. Not only have they provided a great deal of financing to NGOs, but their core assets have complemented the work that NGOs do. As well as the example I gave in my article of Laureate Universities, other examples of cooperation between the two are evident. Pearson’s partnership with Save the Children, RELX Group with International Rescue Committee and IKEA Foundation with War Child are examples of the private sector working with NGOs. The need for the provision of education for Syrian refugees is great; all stakeholders realise that only through sustained partnerships and cooperation can the challenge be adequately addressed.

NRV: Despite the obvious benefits in terms of financing education provision, private sector involvement in the education sector is frequently criticised. What do you say to those detractors who contend that education is a public good and should not be subject to commodification by the private sector?

There are many models of private sector engagement in education and in emergencies. While I agree that education is a public good and should not be monetized, and high quality public education should be available to all, the reality is that government investment in many countries is inadequate. Many education systems do not provide students with skills that are required for employment today or the future. The privatisation of education has evolved as one solution to address this challenge. The fact remains that the private sector is the largest market for school leavers and their insight into the necessary skills should be the driving force of education systems globally. However, the nature of private sector engagement in education in this context (the Syrian crisis) involves cooperation between this sector and governments (as well as other actors). In this case, as well as for future emergencies, the private sector can be an important ally.

NRV: Are you hopeful for the educative prospects for Syrian refugees in the immediate future?

Refugee hosting governments, the UN agencies, NGOs, INGOs and donor governments have made significant contributions to address the humanitarian issues of those in need, including education. While there have been some successes, there is still a long way to go. I strongly believe that the international donor community needs to do more to support the Middle East host countries, which are struggling to provide education and other services to Syrian refugees. The challenge is great, but with a combined effort, the goal of education for all can be achieved.
Recent and aftermath Syrian Crisis: The Role of Syria’s exiled academics and how biotechnology scientists and agriculture researchers’ can help the future of Syria

Dr. Ahmad M. Abdul Kader

The Syrian conflict has dragged on for more than five years and has generated the 21st century’s worst humanitarian crisis. More than 300,000 Syrians have been killed, thousands have disappeared in prisons and at least half the country’s population has been internally displaced. In addition, millions of Syrians have fled their country, creating one of the largest refugee exoduses in the recent history. Less obvious costs to the destruction of Cradle of Civilization includes the annihilation of its once-robust higher education sector and research infrastructure. Hundreds of thousands of students, academic professors, scientists, researchers and highly educated Syrians have had to leave their country, and have scattered throughout the world. Though a resolution of the Syrian conflict remains far off, the future stability of the region, as well as the rebuilding of post-conflict Syria, depends on maintaining the human and intellectual capital that only education can provide. In this article, I focus on my own field, Agricultural Science, and explore its potential to offer a contribution to the solution for the future of the country.

Biodiversity in Syria

Syria is a biodiverse centre of origin for many crops such as wheat, barley, lentils, chickpeas, olives, almonds, pears, plums and pistachios. It is one of a few centres where numerous species of temperate-zone crops originated thousands of years ago, and where their wild relatives and landraces of enormous genetic diversity are still present. Estimates indicate that Syrian flora includes about 3,150 species arranged in 919 genus, in 133 families. Therefore, the protection of agriculture biological diversity is considered as a priority action in Syria. On the other hand, Syria’s location in the Mediterranean basin and the country’s territorial diversity – shores, mountains, plains, and rivers with dams – has long made agriculture a pillar of its economy. The country’s products are as diverse as its environmental and geographical areas: wheat, barley, legumes, olives, grapes, cherries, and citrus fruits. But now, more than five years into the country’s crisis, the agricultural sector in Syria is threatened with complete collapse. This has led the Global Seed Vault to open its doors because of fears that Syria’s agricultural products could go extinct. During the past 15 years, agriculture research centres in Syria opened in new provinces with great impact on food security and agricultural products that made Syria a self-sufficient food producing country. These research centres include:

- Ministry of Agriculture and Agrarian Reform: General Commission for Scientific Agricultural Research - GCSAR (Damascus); General Organization for Seed Multiplication - GOSM (Aleppo)
- Atomic Energy Commission of Syria – AECS (Damascus)
- Ministry of Higher Education: Faculties of Agriculture (Damascus, Aleppo, Tishreen, Al-Baath-University); Faculty of Veterinary Medicine (Al-Baath University)
- Arab Center for Studies of Arid and Dry Areas (ACSAD) as a regional centre affiliated to the Arab League

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International Center for Agricultural Research in the Dry Areas (ICARDA) in southern Aleppo province

**Food Insecurity and the impact of war**

The chaos of war has affected both farms and farmers, the economy, and the populace. Diseases such as wheat rust have also impacted on production and diminished cultivated areas. Irrigation systems have suffered significant damage due to shelling and bombing, which led to disruption of operations, and thus large proportions of crops have been destroyed, and huge numbers of cattle have died. For example, it was recently revealed that the number of cows in Syria declined sharply from 6 million before the war to 1.2 million today.

**How Can Agricultural Science Become a Solution?**

**a) Capacity building:** Syria now more than ever, attaches great importance to building capacity in agriculture and biotechnology research to keep pace with the recent developments in this field. It is a priority aim to improve the production of agricultural products to become self-sufficient with a surplus for export. Strong and dynamic capacity at the technical, institutional and management levels is the most important requisite for successful and sustainable application of biotechnology in food and agriculture, and thus there is a need to:

- Develop human resources to high levels in agriculture and biotechnology.
- Strengthen ties between researchers, farmers, and other stakeholders with emphasizes on protection of biodiversity.
- Establish cooperative programs with institutes in developed countries to help to finance and manage biotechnology and agriculture programs.
- Build capacity for authorities responsible for monitoring scientific and industrial biotechnological activities in the country.
- Build capacity for authorities responsible for assessing, communicating, and managing risks related to food and biodiversity.
- Establish laboratories for detecting genetically modified plants and food.

**b) Research programs:** Public agricultural research programs have had substantial success in promoting rapid agricultural growth. Biotechnology institutes should try again to identify specific priorities for conducting research programs that can help solve some persistent problems in the country. In general, these programs should focus on:

- The development of crops tolerant to biotic and abiotic stresses.
- Identification, utilization and preservation of genetic resources.
- Conducting biological and genetic studies on economic impact of insects in the country and on use of biological control.
- Study the effects of various physical and chemical agents on the living system and on the cellular and sub cellular levels, and the modifications of these effects.
- Diagnosis of hereditary and malignancy disease and prenatal diagnosis for malformation.
- Studying plant-pathogen interactions and improving plant resistance using in vitro culture and molecular markers techniques.
- The integration of biotechnological methods into production.
- Greater cooperation between all parties in the development and/or strengthening of human resources and institutional capacities in agriculture and biotechnology, through existing global, regional, sub-regional and national institutions and organizations as appropriate.
Conclusion

Syrian academics, through expertise and desire to help, are well placed to contribute to the rebuilding of their country. In my case, as a researcher and an agricultural biotechnologist, I am willing to do all I can to help my colleagues to re-establish our institute and laboratories. Even if we must start from scratch, rebuilding our country and ensuring food security for our people will be worth the effort. We will need support in human resources capacity building from regional, national and international institutes to accomplish this. We will also need the right conditions to continue our world. This, above all, requires intellectual freedom, as it is of the highest importance to scientific research. Additionally, academics should be independent of any pressure, especially political pressure and should be given great support and freedom. We hope that soon out academics in exile can return home and share their expertise to ensure the future of Syria.
Interview with Dr. Ahmad M. Abdul Kader

Prof. Dr. Ahmad M. Abdul Kader was previously the head of the Plant Biotechnology Department at the General Commission for Scientific Agricultural Research (GCSAR) in Syria, a member of the Syrian National Biosafety Committee (SNBC) and a member of the Steering Committee of the National Biosafety Framework of UNEP/GEF. He completed his post-doc at Cornell University and also was affiliated with the LG Molecular Genetics Institute at Hamover University, Germany (2002-2003), after he won the Alexander von Humboldt Foundation fellowship. He is a senior scientist, researcher in the fields of plant biotechnology, plant tissue culture and micropropagation, biodiversity, genetic transformation, genetic engineering and biosafety. As a scientist he continuously participates in numerous research projects financed by the European Union and international organizations and publishes frequently in leading scientific journals. He lives in Hungary.

NRV: Can you tell a bit more about yourself? Where are you based now? When/how did you leave Syria?

I used to work at the General Commission for Scientific Agricultural Research (GCSAR), affiliated to the Syrian Ministry of Agriculture and Agrarian Reform, which has effective research centres and stations in all provinces of Syria. GCSAR conducts scientific research in all agricultural areas such as Field crops, Horticulture, Cotton research, Plant protection, Livestock production, Natural Resources, Food industry, Socio-economic studies and also Biotechnology research development. I was a head of the department of Biotechnology, which was established in 2003. It was previously a plant tissue culture laboratory involved in applying tissue culture techniques for micropropagation of plants with the aim of producing healthy and disease-free plants, and developing techniques of micropropagation of some economically important plants.

I established the department and even designed laboratories for all its four divisions. All these labs were operating actively with good results until the conflict happened. In 2012, as the situation was becoming more dangerous, we had to leave our flat in Harasta (Damascus suburb) and rent a flat in the center of Damascus where the situation was less dangerous so that my children could continue their schooling. Even in the centre of Damascus, it was not always safe and frequently we could hear bombing, helicopters and so on. Fearing death at any minute we decided to wait until the end of the school year, so that my eldest daughter could finish her secondary education baccalaureate exam and get her certificate so that she could continuing her university studies abroad. After end of exam in June 2012, my family took a flight to Budapest, while I had to wait to get the certificate of my daughter and also to arrange a permit to leave my work.

Fortunately, I managed to get leave for six months and left Syria to join my family to Budapest in September 2012. Since then I have been living with my family in Budapest and officially extending my leave. This year is the last opportunity to extend my leave (according to the law a maximum of 5 years leave can be given). After this I should go back or resign. Therefore, I hope that at the latest, by September 2017, I will able to resume my work again.

I have not claimed asylum as I am a graduate from Hungary and could get a residence permit for five years, then extending it for further 10 years. Based on this, I now have Hungarian citizenship. After my arrival in Hungary, I tried to find a job at my university (Corvinus University of Budapest), but failed since there were no vacancies. Therefore, I had to search for different types of work such as working as an interpreter and translator for many agencies in Hungary (Hungarian - Arabic and also English), mainly for refugees and the courts. I live with my family in a small rented flat in Budapest, while we left behind our nice big flat with all its valuable contents and
nice memories. My 3 daughters struggled but succeeded to enter and continue their studies at universities in Budapest, while my son also continues his primary school education and also trains in a soccer club.

Though I am lucky that we could escape and continue our daily lives, all my brothers, sisters and other relatives suffer in Syria. They have had to leave their houses in Damascus and have become displaced. This is very stressful and it is devastating to think about how our lovely country has been completely destroyed.

NRV: What do you know about your ex-colleagues who left Syria? Have they succeeded in continuing their work abroad?

It is really hard for everyone, even for me in Hungary, a country I knew well from before. I am in contact with many ex-colleagues. Some of them were subject to threats and discrimination, while homes of others were destroyed by air bombing and they fled to the neighbouring countries. They have suffered so much and have had little opportunities to find work. Some of them got scholarships to the UK for one year. Others fled to Sudan and are struggling to find work and trying to apply for a scholarship through “Scholars at Risk”. Others have fled to EU countries and have started to learn the languages to help them get on with life. I have also heard very sad news that a few of my colleagues in Syria have been killed, injured or imprisoned. We don’t know if those in prison are still alive or if they are suffering torture in jail.

NRV: Biosafety and genetic diversity is a strategic issue for humanity, still not enough attention is paid to this issue, especially not in relation in the Syrian conflict; for instance more attention is paid to destruction of cultural heritage. Where the crops are preserved in Syria?

Germlasm have been preserved at a “Gene bank” preserving genetic resources from different crops at the following institutes:

- Ministry of Agriculture and Agrarian Reform: General Commission for Scientific Agricultural Research (GCSAR) – Genetic Resources Department at the headquarter of GCSAR in Douma and also in many research stations belonging to GCSAR. Actually, I assume that all these valuable gene banks were transferred to a safe place, before the opposition took over the headquarter compounds of GCSAR based in Douma in October 2012.
- General Organization for Seed Multiplication (GOSM). GOSM at Aleppo has the duties of multiplication and distribution of different crops genetic resources and keeping their gene banks at headquarter in Aleppo and also in some research centres in Hama and Al-Ghab.
- Arab Center for Studies of Arid and Dry Areas (ACSAD) as a regional centre affiliated to the Arab League, it has a gene bank in its headquarter beside the GCSAR in Douma. It is also distributed in many Arab countries. I assume that they transferred their gene banks to a safe place.
- International Center for Agricultural Research in the Dry Areas (ICARDA) in southern Aleppo province, which focused on supporting agriculture research on environmental, technical, economic and social factors in Syria as a developing country to achieve food safety. ICARDA had its gene bank of valuable genetic resources shared internationally. The research centres assumed a major role in developing agriculture and enhancing seeds for better products. However, after the armed conflict set in, agriculture centres, like other service facilities, were not spared. Work at ICARDA centre ended in November 2011 after the Syrian army began using it as a site for artillery and rocket launchers to strike opposition-held areas around Homs. When the opposition took over the centre in mid-2012, it refused to allow operations to resume, knowing the centre would be targeted. Indeed, regime aircraft targeted the centre more than once, and it was finally destroyed at the hands of Russian aircraft in November 2015. Genetic labs are in the possession of armed opposition groups operating in the north of Syria.
However, right now, I am not aware about the situation as the war is continuously destroying everything all around Aleppo. ICARDA staff has moved to Jordan and it is assumed that they saved and moved all genetic resources there.

NRV: What has been destroyed during the war and what is still in danger?

GCSAR has its research centres and station in all provinces. First, the opposition took over the headquarter compound of GCSAR based in Douma city in October 2012. Though some of the many valuable resources were transferred to safe places, many resources and valuables were lost after they occupied its headquarters. It also meant a lot of infrastructure, facilities and many genetic resources kept there in the greenhouses or in stores were lost.

The research station of GCSAR at Jousiat Alkhirab in Homs was destroyed and looted. There are also many research stations and centres in Daraa, Hama and Homs, and Rif Dimasq which I assume have also been damaged. In addition, there were livestock stations with valuable breeds belonging to GCSAR which I presume suffered many loses of cattle’s and damage due to shelling and bombing, which led to disruption of operations, and thus large proportions of crops and cattle were destroyed with huge numbers of cattle died. Generally, agriculture production in Syria has suffered dramatic losses. The reason is linked to the events that have caused the decline of animal and agricultural production capacity by more than 80 percent, where many of the livestock breeders smuggled their cows out of the country or sold them in the form of meat because of the difficulty of keeping them alive.

The conflict has decimated the agriculture sector, which has had a major impact on food supplies and markets. Actually, five-six years into the raging catastrophic conflict, Syria's once-flourishing agricultural system is threatened with complete collapse and losing many valuable genetic resources. For example, the valuable grape local variety, “Doumani Ahmar”, is threatened with complete disinclination.

NRV: Which organizations are involved and what can be still done?

Many organizations are involved, mainly the Ministry of Agriculture with all its institutes with GCSAR on the top. Other institutions belonging to other Ministries such as Ministry of Environment, Ministry of Higher Education are also involved. Also, the international ICARDA and the regional ACSAD organizations are involved. The best thing to do is mobilise all international efforts to end this destructive catastrophic war and support the rebuilding of the country.

NRV: What do you think about the future of GMO? Are there other ways to improve agricultural production?

Biotechnology is a tool with enormous potential for overcoming some of the constraints to increase agricultural production. It adds new methods to accelerate plant improvement and food production. These techniques are well-known and practiced in many countries.

On the other hand, genetically modified (GM) crops have gained ground on their conventional counterparts. Up to 18 million farmers in 28 countries planted 179.7 million hectares GM crops in 2015. This unprecedented high adoption rate reflects the trust and confidence of millions of farmers in crop biotechnology. It is important to ban the planting of genetically modified plants in the centre of origin of genetic resources, especially cross-pollinated plants, together with conservation, preservation and developing local varieties and landraces and supporting natural control programs for pests. All in all, biotechnology methods must be applied together with other conventional methods of plant improvements.
NRV: What are the advantages/benefits and disadvantages/dangers of biotechnology?

Modern biotechnology has been touted as potentially one of the most powerful technologies ever developed. Such a powerful technology presents both opportunities and risks. Biotechnology, in its development and application, is knowledge intensive. Capacity-building is therefore essential to allow countries to benefit from biotechnology, as well as to manage its risks.

The potential benefits of genetically engineered food are exciting. At the same time though, there are real concerns on biodiversity, the ecosystem and people's safety if such food has not been tested properly and guaranteed to be safe.

Debates about GMO’s have heated up around the world. Currently, there are two schools of thought on the application of new biotechnology food and crops. The first group consists of those who see biotechnology and genetic engineering being used to develop technologies that will feed the hungry, alleviate malnutrition, and ensure future food security for the world and enhancing the welfare of society. This group also supports biotechnology applications that reduce the need to apply agricultural chemical and protect environmental quality, thus conserving forest resources and biological diversity. A second group, however, consists of those who are concerned that food safety and the sanitary standards of agricultural commodities will be compromised. This group see this as dangerous tINKering with nature and will inevitably adversely affecting health and environment. It is concerned with environmental protection also; fearing that the release of genetically engineered crops into the agriculture sector will result in negative impacts on local environments. They point to the greatest potential of destroying the livelihoods of human race though unforeseen and unknown risks.

Both sides have produced much conflicting evidence supported by science. From these divergent views, it is apparently clear that biotechnology is a science yet less well understood by everybody including many scientists, policy makers and implementers, consumers and farmers. What remains clear and certain is that the application of biotechnology poses one of the greatest challenges in this new millennium for solving many constraints facing agriculture. However, biotechnology applications have always been developed by multinational companies, with the exception of some cases which aimed to benefit small farmers.

NRV: What do you think about other challenges of agriculture?

Actually, water and food security are the key challenges under climate change as both are highly vulnerable to continuously changing climatic patterns. Studies have predicted that the average global temperature may increase by 1.4–5.8 °C and there will be substantial reduction in fresh water resources and agricultural yields by the end of the 21st century. For example, approximately 75% of the Himalayan glaciers are in retreat and will disappear by 2035. Moreover, in Africa (Sub-Saharan Africa) by 2050 the rainfall could drop by 10%, which would reduce drainage by 17%. The majority of the fresh water resources have already been depleted and there is reduction in agricultural production globally with an escalation in population and food demand. Some of the prominent climate change impacts are, growing deserts, and an increase in the magnitude of floods and droughts.

An extreme decline in crop yields in arid and semi-arid areas globally has caused food shortages and a manifold increase in food price inflation. Countries of Africa, Middle East, Arab and Asia have close economic ties with natural resource and climate-dependent sectors such as forestry, agriculture, water, and fisheries. The situation in Syria, which also suffers such impacts from the scarcity of water resources and severe drought, has deepened by the 6 years long period of armed conflict. Therefore, researchers and scientists should focus on finding a solution for example such as groundwater recharging by utilization of wastewater in irrigation.
NRV: Would you like to add anything else?

After war ends, hopefully very soon, there will be a severe lack of appropriate facilities such as laboratories, chemicals, etc. Scientists will need to resume their work and they will have to start from scratch after losing almost everything - infrastructure, laboratory devices, chemicals, etc. Therefore, support and contribution from the international community is essential to accelerate restarting our activities as soon as possible after the end of this long catastrophic war. We also need support in human resources capacity building and to promote cooperation with regional and international institutes in all fields of biotechnology, biosafety and agricultural research.

However, the most urgent thing is that all international community and players should act promptly to end this catastrophic war. The war must be ended not tomorrow but today.
When we speak of the challenge of refugees and forced migrants from the middle east, it is difficult to comprehend the scale of the issue. Estimates suggest that there are some 15 million Arabic speaking refugees and internally displaced persons currently. It is suggested that the average duration of major refugee situations has increased from 9 years in 1993 to 17 years in 2003 (UNHCR). This figure is probably now out dated and the length of displacement is increasing year on year. Forced migration is the new norm in terms of mass dislocations of populations, and well-over 50% of these populations are under the age of 20. When such movement of people occurs, there is much that is done to deal with the immediate humanitarian needs such as food, clothing and shelter. Education has also entered into the humanitarian response, not only as a need but also as a right. Many crises get compounded and remain for many years blurring the line between humanitarian and development. So as time passes we increasingly see new needs emerging not just for education but also social care and employment. For those with a disability, however, there are many additional challenges to overcome.

It is difficult to determine the precise number of people with a disability within the refugee and displaced community. It is likely that at least 10% of that population have some form of disability. When we consider the impact of trauma, injury, and the general well-being of refugees it is likely that this figure is far closer to 20%, using a broader definition of needs, which would include those with hidden disabilities, such as those with learning difficulties like reading and writing impairments.

Whilst some forms of assistance have been taken, and there are excellent examples of projects that focus upon the needs of people with a disability, much less has been done to build inclusive projects which integrate needs within wider planning and from the beginning of the program development cycle.

The challenge for the integration of those with a disability in both camps and urban settings is huge, and is well demonstrated when we consider access to education. Access to education is dependent upon many factors like the quality of teaching and learning, accessible materials and inclusive classrooms but these are only the initial challenges. Looking more widely we are conscious of the need for access to the built environment, infrastructure, information and transportation to facilitate access to education.

Moreover, the solutions to accessible learning need to recognise that refugees bring with them expectations of learning, preferred learning styles, and their own culture into the education system. Even whilst learning the language of a host county, they need resources and materials in their mother tongue. This is also in places where they seemingly may speak the same language as the host community like Arabic in Syria versus Arabic in Jordan, but where the dialects may be different. There is without doubt a significant lack of Arabic digital content, when we speak of

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freely available and accessible Arabic digital content we are speaking of extremely limited resources.

In understanding the extent of the issue, it is important to recognise that education is not delivered through one model only. Potential learners with a disability may attend formal schools, they may be in education otherwise, with informal teaching taking place, they may be facilitated by family or peers, or they may be self-directing their own learning. Increasingly the educational needs of refugees are founded upon an online delivery model and chain. At each stage of that chain is a need to consider and plan for the needs of those with disabilities and special needs.

The delivery chain is made up of three closely related links, each with implications for those with special needs.

1. **The design of the delivery platform.** In planning an inclusive model, care must be taken that any online platform is designed to interact with assistive technologies. It is likely that many learners will use mobile and portable technologies for at least some of their learning. Whilst there may be some access to PC’s, most refugees are likely to use tablets and phones for their interactions. In a recent seminar in Berlin, few of the many developers of platforms and those commissioning platforms were aware of accessibility standards. It was therefore not surprising that few of the platforms were easily used by those with additional needs. Equally, few of the platforms reviewed had incorporated English or Arabic Access tools into their design, severely limiting their usability for those with a disability. An introduction to tools such as ATBar, an open source browser plug in for Arabic and English, was enlightening to many.

2. **Accessible materials.** Equally little had been done to recognise the need for a wide range of accessible Arabic materials that could be used on those devices. Text, images, animations, presentations, videos and recordings were rarely designed to be inclusive, and principles of universal design were rarely considered. Many of the materials were available in one format only, and the proprietary licences meant that there was no opportunity for the materials to be made accessible or converted to other formats such as Braille or mp3. The use of open licences such as creative commons did at least open the door to such development and enhancement. However, the limit of quality Arabic materials with this license is a huge obstacle.

3. **Delivery Partners.** Vital in the chain were those that would use the materials with the refugee populations. As explained earlier such partners may, or may not, be qualified teachers. Even if qualified their training may have poorly prepared them for the circumstances they now find themselves confronting. If they are to effectively deliver the digital content to their students, we need to ensure that the teachers have a good understanding of the needs of learners, and most importantly in this circumstance, the implications of disability. Second, they must understand the content that is being delivered, how to make sure it is accessible and how it delivers 21st century skills. Finally, they need to understand and be confident with the technologies that are being used. Both in terms of general use of technology within the classroom and learning, and more specifically those technologies used by people with a disability. Partners may also use a delivery model that does not engage a facilitator but rather allows users to self-teach/learn. The same principles outlined here would still apply.

**Inclusion through Universal Design**

By designing projects that are inclusive of people with a disability it is likely that our projects will be more effective for all refugees seeking to engage with the content. Designing learning materials that are based upon short simple text as content, can be effective for those with a learning disability or visual impairment as the content can be accessed easily with text to speech on a mobile device. However, the same format is effective for those on older phones or with low bandwidth where richer content cannot be accessed, thus accessing all learners, not just those labelled with special needs.
The use of graphic symbols, such as the Tawasol symbol set to enhance text and clarify meaning is effective as a tool for those with reading and writing needs, but is equally valuable in helping clarify text for those with a limited vocabulary in a specific language.

Finally, the availability of access tools such as the ATBar can make reading and writing easier for all. Using text to speech, colour and contrast changes, and an integrated online thesaurus facilitates learners to have content delivered in a style that suits them. Experience tells us that learning delivered in a preferred format is most likely to have impact.

**Looking Ahead – Build Back Better**

Linking together these elements is at the heart of the approach of Build Back Better. Integrating Arabic accessibility tools into any platform or tools for creating content, ensuring that content is available in a variety formats and reflects diverse circumstances and learning styles, and supporting teachers and facilitators to support all of their students regardless of their needs. In many cases, these foundations were not in place for students with special needs prior to the crisis, but by working together with the partners at all stages of delivery we have an opportunity to meet not just the current needs of learners, but in truth to build back a better basis for education for the long term. Such an education will be vital for all those who will one day return home to their countries and communities and be part of rebuilding devastated communities. Our education system must equip them with the skills to fully participate in the process, regardless of any disability they may have.
Interview with Mr. David Banes

David Banes is the Director of David Banes Access and Inclusion Services and was formerly CEO, at Mada the Qatar Assistive Technology and Accessibility Center based in Doha. He was responsible for developing services to ensure that people with a disability in Qatar are digitally included, and is currently focused on the broad policy framework required to ensure and sustain this. He runs http://www.davebanesaccess.org

NRV: Can you tell a little about your motivation to work in this area?

I have always worked in the realm of access and inclusion of people with a disability. Initially as a teacher and headteacher, then as the director of an NGO in the UK and most recently in Qatar. At each stage of my career I have had to reconsider my preconceptions of what is best practice, and look carefully at what is available and what is needed and think about how that gap is addressed. When I travelled to Qatar, the challenges of a different language and culture, working with what was mostly a blank page for people with a disability, required that my assumptions needed to be questioned. You cannot work in the region without being conscious of the humanitarian crisis arising out of the conflicts in Iraq and Syria - how we met their needs required that I once again question my assumptions and seek new ways to address needs. So I was drawn to the field through personal concern for those most vulnerable, and in my own desire to be challenged once again.

NRV: We hear little about the impact of disability on Syrian refugees in the current crisis. What are the main difficulties that they face in the region?

We shouldn’t forget that Syrians with a disability were a part of the population prior to the conflict, they sought refuge like others, although some may not have been able to make the journey safely. We should also understand that such conflicts lead to further people becoming disabled, not only in the conflict zone, but in seeking escape and even within the camps. Physical disability, hearing loss and sight loss are all commonplace in such zones. In the immediate aftermath of seeking refuge, basic humanitarian needs are paramount food, shelter, heating and clothing, and for those with a disability basic aids for daily living and mobility are always urgently required. But as the crisis continues, refugees with a disability have the same needs as others, they seek access to employment and an education, but face additional barriers if opportunities are not inclusive. Whilst many initiatives speak of meeting the needs of all refugees within a community, few deliver upon that for this significant population.

But as well as those a disability as we discussed, there are two other groups to consider. The first is those who have had a severely disrupted education, they present as having little or no literacy and find the learning of a host language extremely challenging. Many do not have the basic skills and attitudes to settle into learning as adolescents, they face learning to learn all over again. Others are coping with the impact of trauma, both within the conflict areas or within the camps. There are many young people who are non-communicative, uncooperative as a result of trauma and we need to offer tools and solutions that assist them in recovering their voice, both emotionally and sometimes literally.
NRV: You have a lot of experience in different projects related to “digital inclusion” of people with disabilities. It is a very particular topic of which we rarely talk about, especially in the context of the Arab world. Can you give some examples for those who are not familiar with this issue, about the technological difficulties disabled people face every day and what kind of solutions can be provided for them?

That is changing, for a variety of reasons, the ability of disabled people to organise themselves, having access to other experiences and the underlying economic need for education and employment means that more Arab countries are responding to the call for action. Perhaps, as people live longer and acquire a disability, so it is becoming apparent that disability is not about “them” its about “us” and we are all one step away from becoming disabled. For those of us with a disability, barriers emerge very quickly, buildings are inaccessible for those in wheelchairs, those who are blind cannot read a newspaper, those who are deaf cannot hear the fire alarm or doorbell. Not because of their disability, but because of the way in which the world is constructed around them.

Solving these problems is not complex, it needs will and commitment. Requiring building to widen doors and construct ramps, offering versions of the news online that can be read through speech output or braille, and adding technology that vibrates or flashes in response to sounds.

If you cannot access a computer, phone or tablet you face further exclusion. There are additional barriers in communicating, learning, and responding to opportunities. With access to technology, you can live more independently in the community and with your family, you have greater chances to control the world around you, boosting both your sense of personal security and self-esteem. There are many products now available that support Arabic and the market is growing, an opportunity for bright young entrepreneurs with a social conscience to become involved.

NRV: What projects are you working right now?

I always have several things happening at once. Obviously, I continue to work on Build Back Better, it’s very dear to me. But, I’m also working on the impact of disruptive innovation on services for people with a disability, exploring the business case for increased investment in provision of accessible technology and supporting the development of more inclusive public policy in communities, countries and individual organisations. I also spend time supporting small initiatives remotely and curating resources for others to access through social media and newsletters.

NRV: Who supports your project?

Build Back Better has been supported by Qatar Foundation International, I’ve mostly been working pro bono on the project, but they are the ones that have met the expenses and put in resources to get us to this stage. Without QFI there is no Build Back Better, my wider work is supported by paid consultancy and training for those that can afford it, and free services for those that cannot. It is about 50% free work currently and I’m looking at starting a not for profit to channel that free work and allow me to raise small amounts of funding to support grants for grassroots projects.

NRV: What should the international community be doing to assist Syrian refugees with disabilities?

Talk to disabled refugees, listen to them, engage. Don’t just issue statements of policy that can’t be delivered, don’t just move money around to give the appearance of action, but listen to what people need and then engage with the access community to find better ways of providing products and services that meet those needs.
NRV: Is there anything else to add that you feel is relevant?

The problems faced by Arabic speaking people with a disability are writ large when we look at the needs of the refugee population. If we address those needs, and build a solution that is genuinely responsive to those needs we create resources and systems that can be applied locally for many if not all Arabic speakers with disabilities. We can honestly build an inclusive education solution that is better than that we offered in the past, we can build back better.
How Information Science can help to Build a Syrian information society

Souad Odeh, Ph.D.  

With a Ph.D. in Information and Communication Sciences, I always felt the necessity to clarify the ambiguity related to the nature of my diploma and my scientific specialty. In a public domain context, people often asked me if I am an information engineer or a journalist. Indeed, I am an information economist researcher with a librarianship background. Information economy, communication, information technology, media and journalism, librarianship - these topics are all covered by Information Science. But what is exactly the nature of Information Science?

Information Science: A Field of study dealing with human recorded information

There is no single definition of information science. Fifty different explanations and definitions have been mapped by Zins (2007). Authors like Borko (1968), Bates (1999), Saracevic (2010) and Bawden and Robinson (2012) agree that the subject of interest in Information Science is information recorded in documents produced and used by human. Different approaches can be taken to study information and documents. Indeed, Information Science isn’t a discipline based on only one form of knowledge like mathematical or physical science, or like medicine or engineering that are problem solving oriented disciplines. It’s rather a field of study that focuses on a subject of interest, which is human recorded information, using any form of knowledge: sociological, mathematical, psychological, etc. (Bawden and Robinson, 2012).

This means that the analytical tools of information scientists are borrowed from other disciplines. An information economist will analyze the information as a production phenomenon using economic theories, or a physician may use mathematical theory of information to explain information transmissions through canals. So: “Information science is a multidisciplinary field of study, involving several forms of knowledge, given coherence by focus on the central concepts of human recorded information” (Bawden and Robinson, 2012, p.3).

How can Information Science help Syrians in this current crisis? What should be taught and transmitted to Syrian students? I will not approach these questions from an ethical or philosophical point of view, but rather from a pragmatic position based on what I can offer to students as a professor of Information Science and on what is important to teach Syrians now and in the future.

In my opinion, the most urgent need of exiled Syrians is to be professionally integrated into their host countries. Information Science can help by identifying what kind of professional skills students need to acquire to help them to integrate and become competitive workers in their host countries. It can also help by identifying what kind of knowledge is essential to rebuild the country.

Syrians in exile could be knowledge workers

Many studies have been published on the economic effects and challenges of migration in Europe (Fratzscher and Junker, 2015; Karakas, 2015; Massey and Taylor, 2004; Münz, Straubhaar, Vadean and Vadean, 2006). According to these authors, the refugee influx and migrants in general, might be, in the long term, seen as an opportunity for European economies. For example, migrants can play an important role in improving the ratio of active workers within ageing societies.

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However, other economists are less optimistic. They argue that, as many of the refugees are low-skilled, the economic challenges will outweigh the opportunities (Karakas, 2015).

How can we prepare Syrians in exile to be active workers in an economy that is increasingly based on knowledge and information? What are the skills needed? Knowledge is now recognized as the driver of productivity and economic growth. A wide range of knowledge-intensive service activities (research and development, legal services, marketing services and so on) have gained an important role in private and public sector organizations. This has led to a new focus on the role of information, technology and learning in economic performance. Giving Syrian students in exile the necessary knowledge and skills needed to become information specialists could be beneficial for their professional and social integration as such abilities are highly valued in today’s job market. Another factor that should be considered if Information Science could provide a solution for Syrian students is that of teaching information management to students with different academic backgrounds. In some European countries, such as France, an information specialist with a specific scientific background constitutes an added value in the job market. Combining Information Science with the students’ specializations could give them the edge the need in an ever increasingly competitive jobs’ market.

**Information literacy a step toward building Syrian information society**

The construction of modern Syria should, in my opinion, include building a Syrian information society, where “education, knowledge, information and communication are at the core of human progress and well-being”¹². Information and Communication Technologies (ICTs) will have an immense impact on the development of new Syria. They constitute the infrastructure to facilitate access, sharing and producing knowledge essential to the development of Syrian society at all levels: education, health, economic, scientific, and culture. Syrian students must be empowered by knowledge and skills which enable them to access information efficiently, evaluate it critically and use this information accurately and creatively. Therefore, a program in information literacy for Syrians will be more than a necessity in the actual context¹³.

As an academic in library and information science, I think that any project aiming to find academic solutions for the Syria crises, should take into consideration the insertion of an information literacy program that enables potential students (in exile or inside Syria) to be independent learners who pursue information related to personal interests, recognize the importance of information to a democratic society, and participate effectively in generating information. This program should be built on international standards, be part of every academic curriculum and give special attention to critical thinking and interpretative skills so that students can learn how to be vigilant toward information circulating on digital and social media.

Information science is a multidisciplinary field of study. Syrian student’s needs to acquire a practical knowledge on how to manage information more coherently. In other words, they need to learn how to collect, organize and diffuse information within organizations so these organizations create new and relevant knowledge. Information Science can help Syrians to integrate into knowledge economies and prepare for Syria’s post-war economy. This can only be done by educating a new generation of information literate citizens who know when, where and how use information efficiently.


¹³ In 2003, UNESCO and the American Commission on Libraries and Information Science, publish Prague Declaration in which they describe information literacy as a key to social, cultural, and economic development of nations and communities, institutions and individuals in the 21st century, and declared its acquisition as part of the basic human right of lifelong learning.
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Interview with Dr. Souad Odeh

Dr. Souad Odeh, an associate professor at University Claude Bernard Lyon 1, has previously worked at Damascus University from 2005-2012 and at Dijlah University College- Bagdad from 2012-2014. She teaches information literacy, information management, records management, information retrieval, etc. She is currently a researcher at ELICO (Equipe de Recherches de Lyon en Sciences de l’Information et de la Communication). Her research focuses on the economic and social aspects of knowledge management in a digital era.

NRV: Can you please tell us a little about your background and how you came to your current position in France?

I am a Syrian researcher in Information Sciences. I was a professor at Damascus University - Library and Information Sciences Department. In 2012, when the shelling arrived at my town and hit my house, I sought refuge in Iraq with my family, as my husband is Iraqi. I worked there as professor in Dijlah university College in Bagdad, but the situation got very bad for my husband who is a theatre artiste – he was threatened by extremists. So in 2014, I contacted my Ph.D. supervisor in France, who was very reactive and offered me a research contract in CNAM (Conservatoire National des arts et Métiers) for one year. I am now a professor at University Claude Bernard – Lyon 1 and I feel very lucky as my family and I have been saved and I have a job related to my domain of study – which is not the case for lots of Syrians refugees.

NRV: Technological innovation is playing an ever important role in global economic growth, and as such there is great demand in Europe, and elsewhere, for information science professionals. This is itself can be a trigger for high-skilled migration, not only in the information sciences but also in other disciplines. Do you think Syrian professionals can compete effectively in the market for such professionals?

Exactly, Information and Communication Technologies are playing a central role in the development of what we qualify now as the Knowledge Economy. But if technologies constitute the mean, qualified human resources have become the capital of economic organisations.

Organisations pay considerable attention to managing information and knowledge produced by their human capital. To do so they need information professionals that collect, organise and diffuse information by using efficient ICT tools. They value a lot an information specialists that have scientific qualifications in their sector.

Many Syrian migrants have university diplomas and before the civil war, the country was developing its ICT infrastructure. If we give Syrian migrants the competencies in information management, I mean the methods of collecting, organising and diffusing information for the needs of a specific community, they can, in my opinion, compete in the job market.

NRV: What are the skills that Syrians in general need to improve in to be competitive in the job-market? On the flip side of this, what are the main skills that Syrians can bring to the market and what can the world learn from Syrians?

Language skills are essential, and I think, here lies the challenge for Syrian migrants as well as for the host countries. In France for example, the government dispenses a very limited number of hours to teach refugees the basics of the French language. Without a suitable level of language they can’t
go forward with confidence in the job market. Communication skills are also much sought-after. Other competencies that are needed in this changing economic environment are the ability of workers to be reactive, agile and adaptable to changing situations. On the other hand, Syrians could build much on their skills in the field of commercial communication, that is relevant also in a historical context. Indeed, for many centuries commercial activities were always important, even in spite of the different invasions waves that touched the country though history. The question is if and how this know-how can be brought in the actual context.

NRV: In regards to young Syrians in refugee camps in the Middle East – what can be done to improve their skill sets, so that they can compete in the global labour market?

Young Syrians in refugee camps in the Middle East need to go back to school to build, to re-orient or to update their training and knowledge. In my opinion, which is very much affected by my field of study, training in Information Management field could be beneficial to enable them to compete in the global labour market. If they acquire the essential skills in information management they can be knowledge workers. They can work as: record managers, knowledge managers, communication managers, business intelligence workers, etc.

NRV: What are the differences between the Syrian style of teaching Information Science and that of European teaching styles in your experience?

There are many differences situated at different levels. At the foundation level in Syria “Library and Information Sciences” is a four years curriculum and it is not open to other discipline students. Unlike in Europe, students with scientific or human science diplomas can follow curriculum in information science and to get a licence or a master degree in this field.

Another difference is situated at the curriculum content: teaching Information Science in Syria focuses on traditional areas of expertise which is librarianship. Students acquire knowledge in collection buildings, cataloging, classification, information services. However, while information science schools in western countries teach these concepts, they pay more attention to their specificities and their evolution regarding their application (research centres, enterprises, archive, museums, and recently the web context). Also modules on marketing and communication methods are important courses taught actually in information science schools in Europe and unfortunately not in Syria.

Another difference is related to the method. In Syria we focus on theory and students have not always the opportunity to practice their skills, because of the lack of teaching lab and software materials. Also, students in some European countries have to validate their knowledge and skills by doing a stage at the final year in a private or a public organisation. This is unfortunately not the case in information science in Syria, although it’s a good method to perform students skills and can lead to a further partnerships between academic institutions and job market.

NRV: What initiatives that aim to improve information literacy and computer science skills of refugees do you think can make a positive difference?

The UN, through its different organizations and programs, emphasise the necessity to build national programs in computer and information literacy to enable people to fulfil with their different information needs in health, education, economics etc. It describes these skills as vital to build modern societies. But with the proliferation of social media, new skills related to media literacy are now needed. Media and Information Literacy (MIL) is the combination of information literacy and media literacy. According to Unesco, it lies at the core of freedom of expression, it empowers citizens to understand the functions of media, to critically evaluate their content, and to make informed decisions as users and producer of information and media. These competencies are more than important in the context of the Syrian political crisis, where television channels, radio, newspapers and the Internet are used by different protagonists to inform or to misinform people.
Critical evaluation of content can make a difference while constructing a view on the future of our country.

**NRV: What do you think the future holds for Syria? Can education play an important role in finding solutions for the current crisis?**

Syria’s civil war has created a humanitarian crisis that is qualified as the worst of our time. But I am optimistic, I still believe that Syrians have the ability to reconstruct their country and to live together again, even if the actual situation shows the opposite.

Of course education plays an important role to achieve this purpose. If there are any international plans to help Syrians in crisis, they should concentrate on rebuilding primary, secondary higher education for Syrians inside and outside the country. This is what has helped Western societies after the second world war. Let’s help Syrians to be active learners that can identify, acquire and use the different forms of knowledge that are essential to rebuild their country.
Tahdir for Syrians – Building capacity from within

Marianne Boqvist, Ph.D.

*Tahdir for Syrians* is a training program with an aim to enable Syrians to be the real actors in the reconstruction of their own country. It is designed to build capacity in three fields of key importance for Syria through a blend of e-learning and face-to-face interaction. The program is managed by The Arab Reform Initiative (ARI) in collaboration with the Olof Palme International Center (OPC), in partnership with the Center for Middle Eastern Studies at Lund University (CMES) and Ila Souria. The program is funded by the EU and the Swedish International Agency for Development Cooperation.

**Introduction to Tahdir for Syrians**

The current context of mass atrocities and mass destruction of resources, infrastructure, institutions in Syria paired with the dramatic loss of human capital, has triggered an urgent need for professional capacities and relevant skills to build a peaceful, democratic and inclusive society in Syria. The Tahdir training program is designed to provide relevant knowledge and practical skills in the fields of Security Sector Reform and Justice; Architecture and Urban planning - Sustainable reconstruction; Local administration; and fields that are key for any reconstruction. These three courses have achieved accreditation of 15 ECTS on an advanced level by the Center for Middle Eastern Studies at Lund University, Sweden.

In all, 70 trainees per field will be divided in three rounds over 18 months. The selection of trainees is anonymous and follows the criteria stated in the call for applications, targeting individuals with relevant skills committed to improving the lives of their communities and with high potential for learning.

Course leaders are professional experts or scholars in their fields. They have designed the courses to build capacity with participants to take action in a participatory process of reconstruction and transformation, reconciliation and justice. In addition, candidates participate in common courses in psycho-social support, the media, citizenship, project management, gender, local community engagement and democratic decision-making processes, acquiring the necessary tools to build and formulate relevant and implementable projects.

The course on “Security Sector Reform and Justice” trains participants on how to establish and maintain a transparent and professional security agency in a democratic context, how to identify

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14 Marianne Boqvist (Tahdirprog@arab-reform.net) is Programme Director at ARI, leading the Tahdir for Syrians project.
15 If you would like to find out more about the project please consult [http://www.arab-reform.net/en/node/828](http://www.arab-reform.net/en/node/828).
16 ARI conducts ground-breaking research on the Arab security sectors and convenes high level policy dialogues with senior representatives from the security institutions of Arab countries. ARI has a specific program on Syria where staff have worked closely with the best Syrian scholars and with an array of Syrian local groups of peace activists, youth and civil society structures in all parts of the country, cooperated in with them to promote democratic culture through cultural and educational activities, develop community development awareness in public health, protect and empower women and build ties between women’s groups.
17 The OPC has a long experience in developing training and education programs related to the democratic transitional processes all over the world. Their experience and knowledge build directly on the Swedish labor movement. In addition, the Palme Center has conducted extended training and education work for the last two decades in cooperation with partners in the region to support their capacity, networking and advocacy development of civil society organisations.
18 Ila Souria has a large network of scholars and experts on Syria. In this context they provide experts for the Urban Planning for Sustainable Development course and to advise on the sites of study centers.
stakeholders in the reform process, how to draw and implement a security sector reform roadmap, and how to take part in the design and implementation of training programs for cadres of the Ministries of Interior, Defence and Justice.

The “Local Administration and Decentralisation” course acquaints participants with the theory and practice of the modern state, the prerequisites for good governance, budget formulation and analysis and how to prioritize political objectives on all levels.

The course “Architecture, Urban Planning: Sustainable Reconstruction”, complements the training of graduates in architecture, urban planning and similar disciplines to prepare them for working with local authorities and national and international institutions and bodies that lead reconstruction efforts under emergency and post-conflict conditions.

These courses provide both theoretical and practical knowledge and the graduation project that can be undertaken individually or as a team ensures the practical application of the knowledge acquired. The nine best graduation projects from each of the three rounds will receive seed funding to enable the trainees to undertake activities to assist developing their project idea to become implementable. At the end of the project 12 participants from each field will be selected for a study visit to a location relevant for the development of their project.

All courses are given in Arabic, but trainees also take English language courses with the British Council to be ready for future interaction with outside partners and to acquire independent knowledge in their fields. Participants can choose to take the exam to obtain an APTIS diploma at the end of the course.

Lessons Learned and The Way Forward

From the autumn of 2015 until the spring of 2016 it was an intense period for the Tahdir team, while we set up the infrastructure of the program. The first round opened with five weeks of face-to-face training that took place from 4 April to 5 May for 38 trainees in Gaziantep, Turkey. Due to the increasingly difficult situation for Syrians, both inside and outside of the country, we needed to be flexible in finding ways around logistical issues such as managing training at a distance, getting travel permission for individuals, transfer of funds etc. The face-to-face part of the training was continued with 10 weeks of individual work on the graduation project, closely supervised by the course leaders as well as the English Language Courses.

The evaluation of trainees was done through a variety of assessment methods including attendance, quality of participation in lectures and forum discussions, multiple-choice tests, written exams and most importantly, the graduation project.

The two subsequent training rounds of Tahdir will be web-based, run through an LMS for around 30 trainees per field and per round. The platform is accessible from any geographic locality, therefore ensuring the geographic and social inclusivity of the programme. It is also non-discriminatory in a gender perspective as opposed to studying away from the family-context and will increase our chance of attaining the intended percentage (40%) of female participants. Efforts to reach this percentage has also been taken through a revised outreach strategy that aims to improve the visibility of the programme primarily targeting potential participants and donors.

The web-based courses were to be supported with study centres in four locations in Turkey and Syria, under the supervision of study coaches and with the necessary equipment to follow the courses. In the current situation we are not certain if it is possible or useful to establish all four centres as many trainees will not have access to them, but two of them are in the process of being set up. The centres will be available for use by the local communities and will be passed on to local partners after the completion of the programme.
At the end of the project period, 12 students from each of the three courses will be selected to go for a study visit to a country relevant for their field of interest. The idea is to attach the acquired theoretical knowledge with reflections on practical examples.
Interview with Marianne Boqvist

Marianne Boqvist is a Programme Director at ARI, leading the Tahdir for Syrians project. She has a Ph.D. in Islamic architectural history, specialized on urban and rural development in the Ottoman Middle East and in particular in Syria. She has also worked as a research advisor with the Swedish International Agency for Development Cooperation (Sida), managing projects within the human and social sciences for the development of solid infrastructure for higher education in development countries. As the Assistant Director of the Swedish Research Institute in Istanbul (SRII) she worked more specifically with research and researchers in the MENA region and Turkey, still in the fields of human and social sciences, while as a Project Manager with the Swedish Foundation Cultural Heritage without Borders her work had a clear focus on methods of use for cultural heritage as a tool for rebuilding societies and connecting people.

NRV: What was the main driving force behind developing the Tahdir project and why did you pick the word ‘Tahdir’ for the project?

The driving force behind the development of the Tahdir for Syrians project was the lack of opportunities for young and qualified people to access higher education or other capacity building initiatives inside Syria, particularly in regions cut off from the rest of the country. Their only chance was to apply for a very reduced number of scholarships to go abroad, while the brain drain in Syria was already alarming. This was how the idea of this project came up; to reach out and bring an alternative way of capacity building instead of depending on the institutions of higher education that no longer existed or that were out of reach. We also wanted to make this opportunity available to people inside of Syria.

After consultation with the target group, we developed a training that would provide increased competence within the fields of Local Administration, Security Sector Reform and Architecture, Urban Planning: Sustainable reconstruction, fields that are key for any reconstruction process and where capacity development was needed.

The name Tahdir comes from the EU initiative with which we found an opportunity to apply for funding together with the Olof Palme International Center in Stockholm.

NRV: What difficulties did you face in getting this project off the ground and up and running?

In general, building up a project in the context of war is a challenge, not only is the situation ever-changing on a socio-political level, but it also increases difficulties of organising logistics, finding a balance in between the need of visibility for the programme and the security of the participants and of interacting with individuals who live under severe psycho-social stress. In addition, people do not have an overview of their situation in a long term perspective there is also an increased risk of drop out.

Other difficulties we faced were due to embargos as well as companies and organisations reluctant to work with Syria or lacking experience of this type of context.

For the face-to-face training the overarching challenge was the organisation of logistics, such as increasing difficulties both regarding travel and transfer of funds for Syrians in Turkey and elsewhere. As it was the first call it was also challenging to find ways to reach out and encourage to the targeted group of candidates, and in particular female candidates.
For the establishment of the web platform, challenges were faced in the transformation of the filmed live sessions into e-learning material. For the actual implementation, the unstable internet connections and the learning process for how to work when learning through an LMS is another difficulty. This was partly planned to be managed through the establishment of study centers, but due to the situation on the ground it is increasingly difficult to assess the whereabouts of our participants and to establish community structures in Syria.

NRV: Reconstruction of the country, sadly, seems like a far-away prospect. For the time being, how is Tahdir helping people currently living in Syria to improve their lives?

It is true that the situation in Syria has changed dramatically since the conception of the Tahdir for Syrians project in 2013-14. Currently the team works with the objective that the knowledge gained through this training can be used to improve the lives of our participants as individuals to start with. The capacity gained paired with their own motivation and the projects that they prepare for implementation within the framework of the training provides them with the tools to one day improve the situation in Syria and to build an inclusive and democratic country.

NRV: Did you receive any resistance from within Syria towards the project, and if so how did you get around that? Is security an issue for the participants?

Thus far in the project we have not implemented any activities inside of Syria. Security is always an issue for anyone living inside Syria. However, as a participant in the Tahdir for Syrians project you expose yourself to an additional security risk only by expressing your will to improve the situation in the country through change. However, our participants are well aware of the situation and are more than able to assess the risk for themselves. The project also gives participants the possibility not to reveal their identity. In particular, on the platform they only appear as codes, no names are shared.

What are your long term goals for the project? Do you envision rolling it out on a wider scale?

In the case of Tahdir for Syrians, the programme is open to Syrians wherever they are, but primarily to individuals who have the intention to use their knowledge to improve the life conditions for their local community and for the reconstruction of their country.

The long term goal of the project is to build capacity with Syrians inside Syria or who have recently left the country to become active participants in a transitional and/or in a reconstruction process working for the establishment of an inclusive and democratic country.

After this second round that is run through the web platform ARI will observe the short term impact of the programme in its current shape to assess and develop strategies for how to work with the programme in the future. In addition, we know that participants from the first round have advised colleagues and friends to apply to the second round that started in January 2017.

NRV: Do you have any recommendations for other education based initiatives wishing to contribute to empowering Syrians to lead their own reconstruction?

To make an in-depth assessment of the actual needs and possibilities on the ground as well as of any other ongoing initiatives and involve the target group in designing the project.
Thaki: Unlock their Potential

Rudayna Abdo

Thaki is a startup nonprofit organization whose mission is to empower refugee and disadvantaged children with extremely limited educational opportunities to learn and thrive through self-paced, motivational e-learning tools. Thaki distributes donated computers loaded with educational content to education centers working directly with refugee and disadvantaged children. In addition, Thaki provides computers to older students from similar backgrounds, such as university scholarship students, in need of a computer to support their learning. Thaki is currently focused on helping Syrian refugees living in Lebanon but the model is fully transferable to other situations of similar need.

Thaki applies a circular business model “in which stakeholders collaborate in order to maximize the value of products and materials, and as such contribute to minimizing the depletion of natural resources and create positive societal and environmental impact.” Target beneficiaries are K-12 students as well as post-secondary students who require laptops. There are an estimated 482,000 school aged Syrian children in Lebanon, of whom 155,000 between the ages of 6 and 14 are out of school. The content on Thaki computers is intended to provide supplemental learning material to underfunded and poorly equipped education centres set up to assist the children, as opposed to offering a replacement for these valuable institutions.

Current assumptions of Thaki’s impact are as follows: 1 computer serves 8 children for 160 hours of e-learning per month, that is equivalent of 1,920 hours of e-learning per year.

Thaki’s current target of 2,000 computers is therefore estimated to have the following impact: 2,000 computers serve 16,000 children for 320,000 hours of e-learning per month, that is equivalent of 3,840,000 hours of e-learning per year.

In its proof of concept roll out Thaki has distributed 265 computers and electronic devices to 11 organizations (as of December 2016) that are now helping to serve over 4,000 students. Computers are also being distributed to teachers to aid them in their lesson planning and delivery, as a way to broaden and maximize the positive impact. For example, Digital Opportunity Trust (DOT) Lebanon, a Thaki partner, trained 80 Social Support Society teachers on digital literacy in the summer of 2016.

In order to run the entire business model, from seeking donations, through refurbishment and software installation, transportation and distribution, and finally to providing support to end users, Thaki collaborates and partners with experts in various fields that include education, technology, training and logistics. The operating model is lean, efficient and leverages Corporate Social Responsibility (CSR) goodwill to serve targeted beneficiaries. While the Thaki computers, with their educational content and tools, leverage a certain dollar value (which will only grow over time

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19 Rudayna (rudayna@thaki.org) is founder and President of Thaki.
21 This term is used mostly in USA and Canada and refers to students from kindergarten (K) and the 1st through the 12th grade (1-12).
as more content is sourced), the social and educational value of opening a world of e-learning to children cannot be measured in such dollar terms – and arguably has a much higher human value.

We have spent many months establishing a robust computer imaging process at scale. Imaging is the process of taking a model computer and making an exact replica of it on other computers in an automated fashion. Using the free Clonezilla software, the imaging can be deployed simply and quickly across a vast variety of different makes and models of computers. The system is now operating in a “plug and play” fashion. We currently use the Linux/Ubuntu platform as the operating system for the following reasons: The open sourced aspect of Linux is complementary to Thaki’s philosophy because it is free and open, adding no extra capital costs to end users. Viruses are also not generally a concern in the Linux environment. Ubuntu offers the LibreOffice suite which includes programs that look, feel and import/export similarly to the Microsoft Office suite of Word, Excel and PowerPoint. In addition, Ubuntu offers a number of free, offline educational games, some of which are available in Arabic (such as the coding program Scratch). These games are loaded onto the computers providing easy access to the children.

We feel that the Thaki model is innovative and have yet to find another organization that does what Thaki is doing in the Middle East with a focus on serving refugees. Many other organizations are bringing e-learning to refugees. Thaki’s unique angle is that the backbone of operation – the computers themselves – are donated. Costs are therefore limited to operations, logistics, and personnel, making the model competitive. Laptops and computers allow for full word processing, presentation, spreadsheet, and other programs as well as a wider range of interactive programs which tablets do not offer as effectively.

Thaki’s model is innovative and sustainable for the following reasons:

The “plug and play” system means that from a technological perspective, we are now set up to capture the “perfect image” from a computer and “deploy” that image simultaneously to multiple computers by entering a few simple commands.

Computer donations are easier to secure than funding requests. When campaigning for computer donations, prospective donors are consistently supportive of Thaki’s mission. It is easier to ask for computers than it is to ask for funding in many cases.

Donors become regular and cyclical as they continue retiring old devices. The impact of the donated devices is reported back to donors with the hope that they will continue donating their retired computers given their great social impact. This reduces the campaigning effort in future years.

Computer donations reduce capital costs, conserving funds for operating needs. Thaki is a tech-based social enterprise that does not purchase its core operating platform: the computers.

Satisfies Corporate Social Responsibility (CSR). The disposal of electronic devices is often a liability for organizations. Donating these devices solves that problem in addition to satisfying CSR aspirations.

Electronic recycling opportunity. While e-waste regulations in the Middle East are not as advanced as those in the western world, many organizations care to do the right thing and we want to help address the e-waste problem by greatly extending the life of devices and responsibly disposing of machines that are no longer viable. Thaki is currently investigating a sustainable end-of-life disposal solution.

Partnerships Leveraged. Partnerships are continuously being forged with entities that complement Thaki’s missions along the entire value chain.
Thaki has cleared the proof of concept and is now looking to scale. Partnerships along the entire value chain are always welcomed, therefore we encourage anyone interested in the project to consult Thaki’s website (www.thaki.org).
Interview with Rudayna Abdo

Rudayna is the Founder and President of Thaki. She studied Architect (MIT) and Urban Planning (McGill University), and is a graduate of the executive leadership program at Amsterdam’s THNK School of Creative Leadership that promotes transformational thinking, innovation leadership, and venture design to build human-centered systems for a better future. Rudayna recently took a side-step from her career in urban planning to pour her energy into the creation of Thaki. Her involvement in promoting educational opportunities goes back many years.

NRV: What was the main motivation behind starting Thaki?

One of my dreams with starting Thaki was not only to help refugee and disadvantaged children regain their lost years but to, in fact, unlock their potential and help them leapfrog over the gap. I’m a big believer in using technology to ignite the passion for learning and growing and nothing has opened my heart more than seeing these kids – just wanting to live normal lives.

Late last year I left the corporate world as an urban planner to dedicate myself fully to Thaki. As a daughter of Palestinian refugees, further displaced from Lebanon during the civil war in the mid-1970s, and a mother myself, I felt the need to contribute to the plight of children whose education had been stolen from them. I saw an opportunity to leverage viable computer resources no longer needed by their original users, repurpose them, and deliver them to a new user group, effectively providing these devices with an entirely new life.

NRV: What difficulties did you face in setting up the project?

My project is technologically based and I do not come from a technology background – that was my first challenge! I needed to find out if what I wanted to do conceptually was possible to do, and at speed and scale. I was very fortunate to be able to tap into a wonderfully talented and diverse group of people with varying skill sets who helped me from the very beginning. They patiently put up with my probing questions and persistence to find viable solutions for our challenge. I had declared in front of a small audience that the big pilot test was going to be launched by the summer of 2016 and I was determined to see that happen. We made the deadline.

I also met with a number of naysayers – one who thought the solution was not scalable, and another who was simply sceptical. I took their input to heart but ultimately continued along the course. One of them has since come around and become a strong proponent of Thaki.

These are still early days for us and we have a lot of learning to do. I don’t doubt that our model will continue evolving, both operationally and technologically. Whatever solution we have today will likely look very different from the one we’ll have a year from now.

NRV: What recommendations do you have for others who may be thinking of setting up similar initiatives in the Middle East?

Get out into the field as much as you can, seeing things first hand and listening to people’s experiences and perspectives with as few preconceptions as possible is invaluable. Don’t be intimated. Collaborate. Share experiences with others in the field and help one another out, even if it feels like you’re talking to the competition. There isn’t one solution; the problem of educating displaced people is vast and different approaches are warranted for different situations. Don’t accept a roadblock; find a way around it by persistently probing and, if and when necessary,
reiterating and redirecting. Have a trusted person to whom you can turn for help and to pull you up when you’re feeling discouraged. Think through all the gritty details along the whole value chain; you may not have all the answers from the onset but try to consider as many of the intricacies as possible.

**NRV: In terms of providing computers to Syrian refugees who wish to study, are there any concerns, other than access to technology, that you would like to draw attention to, in particular IT training needs of Syrian refugees?**

Getting technology, with appropriate content, in the hands of any learner is just the first step to a successful learning experience. Sustained tech training for the instructors is a critical component especially if many of the teachers are not comfortable with the use of technology or do not know how to optimally use it in their lesson planning and lesson delivery. The children also need guidance – more intensively initially when they’re still being introduced to the computer environment; this guidance may be tapered down once they are more confident with e-learning tools and can work more independently on the computers. Technical support, for both software and hardware issues, should not be overlooked. All of these points require the resources – partnerships, expertise, funding – and resources are often in short supply.

**NRV: In your opinion is there much recognition of the educational needs of Syrian refugees in wider Lebanese society? If so, are projects such as Thaki well received and supported on a local level?**

Yes, there is definitely recognition and support of the educational needs of Syrian refugees in Lebanon. The Lebanese education ministry has opened public schools to an afternoon second shift specifically for Syrian refugees. In addition, many existing organizations, non-profits and individuals have stepped in to help fill the unmet needs of the displaced children. My experience is that the collaboration among these various initiatives is strong, particularly in the non-profit sector, and I believe we can all be most effective if we maximize this collaboration.

**NRV: Is there anything in particular that you would like to add?**

I believe the greatest way to help solve such sticky and difficult problems as educating, housing, feeding, employing and generally caring for millions of displaced people is to leverage partnerships in the obvious as well as unusual places. I think Canada has a great model of engaging its citizens in the sponsorship of refugees such that they are mentored and cared for while they integrate into their new and very foreign community. Help does not only have to come in the form of funding. For example, engaging with artists to do art therapy with children is extremely helpful. It would be great to see more physical activity applied in the form of sports therapy. In Thaki’s case we ask corporations and institutions to donate assets they no longer need. In fact, we rely on these leveraged partnerships: from education content providers (whether open sourced or proprietary), to computer donors, tech experts, educational and training experts, and logistics companies, to name a few. Everyone making a small contribution from their business sector or area of expertise can spin massive impact.
Completing medical school in itself is challenging, but attempting to further your education from within or while fleeing a war-torn country certainly does not make it any easier, which is what displaced Syrians are facing right now. This is why we at the Global Multilingual Online College (GMOC) and Global Institute for Health and Human Rights (GIHHR), housed at the University at Albany, State University of New York, have partnered with other professors, colleagues, and volunteers to create an online medical education program, free of charge for displaced Syrians.

We are Iranian physicians, human rights activists, and faculty members who have dedicated our lives to bringing global recognition to the intersection of health and human rights, and the right to education. For decades, we have worked in the field of HIV/AIDS and delivered medical education. In the past four years based in the United States, we developed online education programs for vulnerable students in the Middle East, and we continued our work to help ensure that Syrian students have the opportunity to continue their pursuit of higher education during displacement.

Starting in the summer of 2014, we began outreach to funders, organizations, and universities across the world to gather support and build collaborations to increase displaced Syrian students’ access to education. In May 2016, we were invited to attend a workshop organized by Yale University faculty members, which brought together leaders from Syrian-American organizations, and displaced faculty members from Syria. At the meeting, attendees had the opportunity to speak directly with faculty members and students who were internally displaced within Syria. The faculty and students persevered to continue medical education and medical practice, operating under the name of “Free Aleppo University”. It was a great opportunity for us to connect directly with the displaced Syrian students and faculty who could potentially benefit from an online medical education program. We launched this project with the collaboration of these displaced Syrian faculty members, and the students who volunteer to represent their classmates, many of whom communicate with us 24/7. Without their support, we would not be able to successfully launch the program to address the students’ needs.

Due to the ongoing conflict in Syria, millions of people have been displaced from their homes, 200,000 of these are displaced from their colleges and universities and face challenges in pursuing their higher education. To help those with a passion for helping others, we worked for two years to develop the Online Education for Displaced Students project, to deliver free-of-charge higher education.

We thought, perhaps, if we deliver the academic courses that they need, this would be a way to say, "we are with you and you are not forgotten". If we connect them to our students and faculty

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abroad, maybe they will feel welcome and supported by the global community. Perhaps, this can give them the hope to continue pursuing their passion.

Syrian students face several barriers when it comes to seeking higher education during displacement. To solve the issue of moving from one conflict zone to another – a situation which many of the students face – we designed the program to be online in its entirety so the students can continue their education in any location and in their native language of Arabic. This goal – to have access to higher education in any location worldwide, and in any native tongue – is the larger vision if the Global Multilingual Online College, which we established in late 2015.

Of the seemingly countless struggles that Syrian students face, another is the barrier of language. The course material production process specifically aims to alleviate this barrier. Numbers of faculty members, colleagues, and volunteers work to record UAlbany-created courses, which are available in English; transcribe the course materials; and translate all materials – including presentations and lecture audios – into Arabic. The translated course materials are then delivered to the students by bilingual adjunct scholars with the mentorship of the UAlbany professor who created the course. This process is crucial, as it does not make the program exclusive to English-fluent students.

Simultaneously, the program included an online Intensive English Language Program (IELP) in order to improve students’ English proficiency, thus increasing their future academic and career opportunities, and allowing them to access more resources in a global network. The online IELP provides an intensive approach to learning English – even for students across the world in Syria – through daily asyncronized exercises to develop reading, writing, listening, and speaking skills; and through weekly synchronized “live sessions,” which provide students with a virtual classroom experience to practice their skills with their teacher and fellow classmates. Over 500 FAU students and faculty took the opportunity to take the English proficiency exam to be placed in their matching IELP levels. Many students who may go to other countries may experience culture shock and may need to improve their language skills to hold part-time jobs to survive as they continue their education, and participation in the IELP seeks to alleviate this.

In addition to the great challenge of creating the mentioned programs, there was the challenge of creating a means of delivering the program to students living half a world away and with major technological barriers. Our research showed that unlike typical students, 85% of our target group lacked access to a computer or laptop; however, 97% had access to a smartphone. This discovery led the program to add the component of higher education delivery via smartphone applications. A faculty member and Ph.D. candidates from University at Albany’s Computer Science and Engineering Department helped take the program one step further by creating the “Shaban” application. Unlike other education delivery applications, Shaban is user-friendly for first-time students to online courses, and is designed specifically to alleviate technological barriers faced by displaced students, including high-functioning during periods of infrequent or low internet connection.

The circumstances in Syria have led to attacks targeting healthcare workers, causing many to be killed or forced to flee the country. Due to the crisis, the success of Syria’s next generation of healthcare providers is more important than ever. Because of this situation, medical students are the target group for this intervention. The right of people to have access to health is the key objective of the Global Institute for Health and Human Rights.

In its launching semester, the program enrolled 320 students in the Genetics course, and 30 students in the Upper-Intermediate Level IELP course. In the second semester, which stretches from November 2016 to March 2017, 353 students have enrolled in Head and Neck Anatomy, 542 have enrolled in Medical Terminology, and 96 have enrolled in the Intermediate Level IELP course. Moving forward, the goal is to expand the program to deliver more medical courses, as
well as courses in other fields such as social entrepreneurship, mental health, emergency preparedness, and others. In the future, we hope to scale up the program to be delivered to other displaced and refugee populations across the world. To achieve these goals, we are seeking to partner with other institutions, academics, and volunteers to fill roles in course creation, translation, delivery, technology development, fundraising, and many other roles.

Thus far, we have received support to launch the program from the University at Albany's Office of the Provost, the Center for International Education and Global Strategy, the Intensive English Language Program, and the University at Albany Foundation. “Without the contributions of countless faculty members, interns, volunteers, and many other colleagues – such as our dedicated Project Assistant Michelle DeOcampo – we would have never been able to launch such a program”.

The program has experienced success since its establishment in June 2016. Within months, the program increased in the number and variety of courses offered to students. More volunteers, professors, and organizations have contributed their efforts to better the lives of these displaced students.

Although progress is promising, there is still much more to be accomplished. The program currently has hundreds of students enrolled, yet there are hundreds of thousands who need this opportunity to continue their pursuit of higher education. Expansion of the program can enable many more students to be able to continue – instead of halt – their pursuit of education during displacement. If more people are informed about this program, hopefully the individuals and institutions who wish to help these students will know how to take action.

We are very happy to help these medical students become the new generation of doctors. This is our hope – not only provide academic education, but also support individuals who will care for and deliver service to people in society regardless of race, religion, gender, or nationality. That is rewarding.

Thousands of doctors, faculty, and people around the world supported us when we were in prison. Now is our time. We are faculty members in one of the biggest education systems in the United States. As a member of SUNY, it is our job to help those people who need higher education.
NRV: Yours is an exceptional initiative under various aspects: one is quality and the number of students who are enrolled in your program. What is your strategy to secure the high quality of your programs?

All course materials are syllabi and course content from US based universities, which ensures quality of education to international standards. To ensure quality in delivery, our plan is to have external monitoring evaluation from experts from Yale University and University of South Carolina.

NRV: Was it easy to establish the process of granting credits for the completion of your courses?

Credit is one of the greatest challenges in this initiative because each institute and university has different policies and regulations for granting credits. For this project, we want to have capacity building for Free Aleppo University. FAU will grant credit, and we as individual experts from external universities will conduct evaluations.

NRV: You underline in your article the role of volunteers. Who are they and what is there motivation?

Our volunteers include undergraduate students, graduate students, professors, scholars, doctors, and many others from different academic backgrounds. They all have the passion to help vulnerable people increase their access to health and education. The GIHHR-GMOC has 48 student interns, 30 of whom volunteer. In addition, we have numbers of students from other universities within and outside of the United States. The situation of fellow students in conflict zones motivated them to help in some way. In recent years, as the Syrian crisis has become more dire and prominent in the media, students have found volunteering in this program as a great way to directly help Syrian people.

NRV: You have already reached out to many students both in the US and overseas. What was your strategy for connecting with them?

We have 47 interns at our institute. We shared our project with all of our interns, and many of them volunteered to dedicate their internship to this project as their primary assignment. We also received more students who reached out to us following the publication of our work in the university newspaper and Times Union local paper. In addition to this, we announced a call for volunteers on our website and the Electronic Discussion Group for Medical Educators. We have received numbers of volunteers, faculty members, and others who would like to help the project, and most have joined us as volunteers. In addition, we have hired students and professionals who are working on this project.
In regards to connecting with the students overseas, many Syrian faculty members who are displaced inside and outside of Syria have been in touch with us and explained that there are many medical students who are looking to continue their education. Through connection with these Syrian faculty members, we announced our online education program to displaced Syrian students, and those students continued to bring in more friends and peers to the program.

NRV: Besides the valuable support of the University and your volunteers, did you succeed to get any other financial support to continue and scale up your project?

We have submitted proposals to numbers of funders and organizations. Unfortunately, most organizations do not prioritize education for young people in conflict zones, and do not understand the importance of giving hope through continuing education for the young generation in conflict-afflicted countries. Recently, we have been happy to receive two small grants. With the small grants, we have the ability to continue some courses for the next semester but it is not enough to cover courses for a one-year program.

NRV: What resistance have you faced in setting up the project?

We have faced difficulties in communication with students due to cultural differences, language barriers, and technological barriers. Each semester, we have the challenge of identifying the level of proficiency of the students in each course topic. Due to security concerns, some students are sometimes unable to keep up with their coursework for a number of days.

NRV: What recommendations do you have for others who may be thinking of setting up similar initiatives?

For others who would like to create similar initiatives, it is important to deliver courses to students in their native language. Within each course, it is important to include other extracurricular activities to keep students engaged, give students hope, etc. It is important to review the curriculum that students in conflict zones received at their previous institution, and to match their online education curriculum to complement and continue students’ previous curriculum and match students’ level of proficiency. Many students in conflict zones have not had the opportunity to take online courses, so simple user-friendly online platforms are essential for delivery.
The enormous complexity of the Syria crisis demands also complex approaches for solving the different problems that have arisen from the deplorable situation. The project HOPES (Higher and Further Opportunities and Perspectives for Syrians) aims at such a varied approach that tackles a whole bunch of problem areas. HOPES belongs to a number of efforts made by the EU to improve access of Syrian refugees to higher education in their countries of asylum in the Near East and Turkey. The project is funded with 12 million Euros by the EU Regional Trust Fund in Response to the Syrian Crisis, the ‘Madad Fund’, which gives educational activities a high priority.

HOPES is, in the true sense of the word, a European undertaking which is implemented by a consortium of four renowned European institutions – the German Academic Exchange Service (DAAD), the British Council, Campus France and EP Nuffic – with DAAD in leading role. Each partner organisation is responsible for one country (the British Council for two) and for one work package. The countries of the action are Turkey, Lebanon, Jordan, the Kurdish Region of Iraq and Egypt. In all countries project offices are maintained; the project’s headquarter is situated in Amman.

The design of the various work packages were oriented to the principal needs of the affected youth – mainly refugees. The main obstacles they faced were identified as: insufficient documentation of prior learning results, inadequate technical and linguistic preparation for a university study and high costs, mainly tuition fees. All these aspects are still prevailing unfortunately, as has been shown in a recent in-depth study entitled “Higher education for refugees in low resource environments”, carried out by Jigsaw Consult. HOPES tries to tackle all these problems and to offer solutions.

The Syria Education Desks, which have been established in all countries of the action, offer comprehensive counselling services which help to reduce the information deficits amongst refugees and partly also the host communities. This means making the information seekers understand their place in the higher education system of the host country, and informing them about which education opportunities are open to them and which not. Furthermore, it is also important to identify suitable offers of support, but also to better understand the needs of the target group to be able to adjust existing activities and to initiate the creation of new ones.

The HOPES scholarship fund provides full scholarships covering tuition fees and living allowances for refugees and vulnerable youth from the host communities. The first intake for the academic year 2016/17 has been concluded and nearly 200 Syrian refugees were given the opportunity to assume or to continue their university studies. The Syria Education Desks shall provide a mentoring service and support to try to ensure good results.

A work package called “Higher Education English Access Programme” addresses not only deficits in the proficiency of the English language, but aims furthermore at conveying essential soft skills.

24 Dr. Carsten Walbiner (carsten.walbiner@hopes-madad.org) is director of the HOPES project.
important for university studies (analysing and presentation abilities, information seeking, and computer skills).

To enable local institutions to better react to the situation and to come up with innovative and need-oriented solutions HOPES will support several dozens of “short projects” with a maximum amount of €60,000 each.

One of the great challenges the project has to cope with is the uncertain and rapidly developing situation inside Syria and in the neighbouring countries hosting the majority of refugees. To learn about changes, to benefit from offers and activities by others and to be able to initiate new action HOPES will play the role of an initiator and facilitator of national stakeholder dialogues. They shall focus on certain aspects that are of special relevance for the target groups like the problem of missing documentation or the acknowledgement of prior learning results. Two regional conferences will widen the perspective and aim for a closer exchange and cooperation beyond national boundaries in the region. The first is planned to take place in mid-May in Amman.

The realization of several aims requires a well-structured and functional communication system. It’s centrepiece will be a website (www.hopes-madad.org) which is momentarily under construction. This site will provide a data base on scholarship opportunities and other available support for refugees but also information for stakeholders and partner organisations as well as documentation on the project’s progress.

Fortunately HOPES is not the only project that focuses on the area of tertiary education within the Syria crisis. The EU, in particular, has recognised the importance of this area for now, and for the future reconstruction of Syria, and supports – mainly through the ‘Madad Fund’ – a number of other projects in the region which are implemented by Spark, the German Jordanian University, UNHCR and others. The DAFI refugee scholarship programme of UNHCR which is chiefly funded by the German government has been heavily expanded with a clear focus on Syrian refugees. The existence of these different initiatives creates a bigger need for coordination in order to guarantee the best use of the resources and the creation of synergies. To achieve this, DAAD has concluded an agreement with UNHCR that aims at a far reaching coordination, and even harmonization, of scholarship activities. HOPES plays an important role in this. The first intake for HOPES scholarships has been arranged in close cooperation with UNHCR and, in Turkey, with the Turkish organisation YTB as the implementer of UNHCR’s DAFI programme. HOPES tried to make offers that are complimentary to existing programmes and cover fields excluded by them. Thus the majority of scholarships were granted for studies at the master level, widely neglected within the other support schemes. This focus also pays due attention to the fact that there is a first generation of refugee students who have accomplished their undergraduate studies in their countries of asylum and are now seeking opportunities for acquiring further education. The EU-funded institutions held regularly coordination meetings for the exchange of information and the development of joint activities.

It would be wrong to misunderstand HOPES as a solution for the whole variety of problems that have arisen from the Syria crisis in the field of higher education. The project’s financial endowments, as well as its finite life span (it ends in November 2019) set clear limits. But it is to be hoped that the structures developed by the project will continue to exist and further be strengthened, that solution approaches will serve as models for other activities and that experiences made will help to make future efforts more effective and fruitful.
Interview with Dr. Carsten Walbiner

Dr. Carsten Walbiner who holds a Ph.D. in Oriental studies is since April 2016 project director of the HOPES project. Through long years of working at DAAD headquarters and other institutions in Germany, Lebanon and Palestine he has gained a great experience in the field of academic cooperation between German and Arab partners.

NRV: Where did the original project idea come from for HOPES? Can you tell us a little about how it is organised?

The consortia partners who are normally active in the field of academic exchange between Europe and the wider world recognised that an adequate response to the Syria crisis needed to address Syria’s neighbouring countries which receive the lion share of the Syrian refugees. Thus the idea was born to create a project that helps to create offers in the region. There are about 20 people working for the project in the five countries of the action but also at the implementing institutions’ headquarters in Europe. The experience of the partners and also research carried out when the project was initially being designed allowed us to align it with the real needs of the target group(s). However, things are changing rapidly, and so a constant adjustment is necessary.

NRV: Can you tell us about how the project works in practical terms for would be students; how do they hear about the project, how do they become part of it, what requirements must they meet to join it, how long does the application process take and so on?

Anyone who is interested in the project should seek advice from the education project managers (EPMs) who work at the Syria Education Desks in the five action countries. All applicants who fulfil the formal criteria (mainly academic merit/qualification and vulnerability), which might slightly vary from country to country, can apply for a scholarship. A selection committee, which also includes local expertise of a different kind, makes a decision mainly based on the mentioned criteria. Normally this includes an interview where the applicant has the chance to directly introduce him/herself. We try to make the whole process as quick and smooth as possible, but intake is only possible at the beginning of a new semester/academic year.

NRV: Which are the channels that you disseminate this program in regionally?

This varies from country to country. We try to be as comprehensive and innovative as possible. Institutions and initiatives working with refugees like UNHCR, several NGOs, associations of the refugees themselves etc., are of special importance. Social media plays an important role, but also mouth-to-mouth promotion.

NRV: How many students are you able to reach out to? Can you estimate how many are excluded due to missing documentation and what alternative approaches would you recommend for these students?

It is difficult to measure how many people will be reached in the end. The project aims at providing counselling service to more than 40,000 persons, but this will range from giving basic information to detailed individual counselling. Likewise, it is difficult to say, how many potential students lose their chances for higher education due to missing documentation. Regulations in the region are partly very strict and regulated by laws that do not take into consideration the special
situation of refugees. But all countries try to find solutions and have partly already done so, for example by creating special higher education entrance exams like in Turkey. Potential candidates should seek advice that is provided not only by HOPES but also by other institutions. Many universities have established, partly with the support of the EU as in the RESCUE programme, facilities that provide counselling. Should access to local institutions be barred, online studies – for example organised by KIRON University – might be an alternative as many of the universities offering such courses have created innovative solutions that allow for an acceptance of students with missing or incomplete documentation.

**NRV: In your experience what are the main challenges to realize HOPES?**

As has already been stated, the enormous complexity and changeability of the situation poses a great challenge, as developments are difficult to predict. Another problem is time. Higher education is not a short-term affair, but in this special case quick impact and results are expected while a long-term commitment of donors and political decision makers is often missing. We also have to understand that the situation creates a lot of problems and additional pressure for the local tertiary education systems which were already suffering from several shortcomings before the crisis. We have to find a balance between securing support for the refugee students and not damaging the systems by overstressing them. Another issue is the question: ‘What comes after, what can we offer refugees after the graduation in case that the crisis will last and a return to Syria is not an option?’

**NRV: How can you ensure sustainability of the projects after November 2019. Are there any plans – even hypothetical – to continue with different donors? Or to involve other organisations?**

Doing a good job, producing convincible results and creating functioning structures will be the best argument for obtaining further funding. We are certainly thinking of a continuation of the project, but hopefully with a different approach, i.e. focusing on work inside Syria once peace will be established again.
The ‘Welcome Student-refugee program’ was developed in the wake of the emerging refugee crisis in Europe in 2015-2016. Along with this large influx of people we noticed that many of the people arriving in Belgium were studying in their home countries. Many of these young people had to abruptly stop their studies and flee to a safer place to live. The Vrije Universiteit Brussel (VUB) developed this program to focus on the potential students with a refugee background have and to give them a fair chance to continue their studies so they can build a better future for themselves.

At the end of 2015, the rector of the VUB put together a group of experts to examine what actions the University could undertake to help refugees in the country. Research conducted by this taskforce showed that out of 35,000 people applying for asylum in Belgium, 23% had been students before they fled their country, with 11% of them enrolled at university level. Incorporating this large cohort of refugee students into the university system is an obvious step towards contributing to effective integration as well preparing the refugees for a prosperous future.

To implement an effective programme, education compatibility of the refugees’ academic background had to be determined. As such VUB conducted a comparative study between the education systems in Syria and Iraq, and the Belgian educational system. The comparative study indicated the equivalent study levels and the mapping of these levels into the Belgian system, which then allows a pre-admission check to be performed to analyse the academic credentials of potential refugee students.

This pre-admission check, or pre-screening of the refugee students, follows a step by step process that is under ongoing internal review and modification, in collaboration with the different faculties. In their application, the student is required provide proof of their academic background per the rules and regulations required to enter the university system. If they can do this, the student can submit an application via the regular application system, as is done for all the prospective students at VUB. To be eligible to take up a place the student must first obtain a B2 level language certificate in either Dutch or English, or provide the necessary documents. As the language requirement may be a barrier to some prospective students, the university is willing to offer free intensive language courses in English and Dutch during the summer for those who have difficulties with the language.

When the programme was set up, the taskforce envisaged to start the new academic year (09/2016) with 10 to 15 refugee students. Instead, the academic year started with 45 recognized refugees who follow a bachelor or masters course at the university and another 76 who are accepted upon condition they meet the language requirements first. It is envisioned that these 76 will commence their studies next year.

The programme has been highlighted as an example of good practice for the European University Association, the Academic Cooperation Association and the European Commission DG Education, Research and Innovation. There are no structural barriers to implementing this
initiative in other higher education institutions in Belgium, and indeed interest from the sector is already on its way. The University of Ghent has started a similar programme that aims at helping refugees who want to start or continue studying at the university. During the preparatory higher education programme for refugees, they learn to improve their language skills, receive study guidance and counselling, and catch up on important subjects to prepare for higher education. The University of Antwerp started the new academic year of 2016 by offering an intensive preparatory one-year academic Dutch language programmes to refugees. Further afield, a similar initiative is underway in Germany at the Free Berlin University.
Interview with Dr. Mohammad Salman and Luc Deschouwer

Dr. Salman holds a Ph.D. International Relations, he works also as Policy adviser and carries out research in the Department of Political Science at Vrije Universiteit Brussel (VUB). As head of the Welcome Student-Refugee Programme he has been invited as an expert and a moderator to several conferences and seminars to discuss the role of public authorities in easing access to higher education to refugee students and how universities can organize themselves on the ground.

Luc Deschouwer holds a Master degree in history and has worked for almost 35 years for the Vrije Universiteit Brussel in different faculty positions as well as in the central administration. As project manager it is his responsibility to roll out this project to other higher education Institutions in Brussels, and, by extension, to work out possibilities for the integration of these students in society.

NRV: Which organisations do you cooperate with to find students that are interested in joining the programme.

We cooperate with numerous external partners (NGOs and public agencies) that have direct contact with refugees and who operate in the field of integration. Some organisation facilitates the dissemination of the project among refugees, while others can help more at the later stages of the integration process of students. The following are some examples of the organisations we work with. Vluchtelingenwerk Vlaanderen/ VLW is an NGO operating in different refugee centres in Flanders so it has direct contact with the refugees arriving both in Flanders and Brussels. We work together on the integration of the student-refugees both on the campus and into Brussels’ society, as they organize a wide range of activities to support the integration and the political sensitization of refugees. Tracé Brussel, an NGO in the social sector working closely with the Integration sector has daily contact with refugees (and others) who want to work or to study in Brussels. So they often refer students to the programme. Huis van het Nederlands is an organisation that offers Dutch language courses, counselling and guidance to refugees refers potential students to us. Fedasil, the Federal Agency that operates a large number of refugee centres all over the country and deals with all refugee matters in Belgium, sends substantial number of students to the programme. Employment offices such as VDAB and ACTRIS also advise potential students to the programme. Finally, integration offices such as “Integratie” in Brussels and BON in Flanders refer potential students to us as part of their efforts to assist in the integration of refugees into society.

NRV: Other than language skills, what are the main barriers that refugee students face when they begin their studies at VUB?

Like most of the international students who come from non-EU countries, integration into a European academic system is not easy at the beginning because it is different from the academic
systems in their countries, but after a few months, it improves. Other issues are IT-competences, financial needs, housing, and transportation.

**NRV:** Are you able to provide any kind of assistance for those who cannot prove their academic background, due to the difficulties to obtain the documents in war-time?

We didn’t expect them to have their certificates, but I’ve been surprised to see that most students do. However, we can provide assistance for those who cannot prove their academic background. For example, in case they cannot provide their documentation, on humanitarian grounds, they can instead sit an aptitude test to prove their competency. In this case the student must submit a reasoned request and some documents to prove his/her identity, his legal status; moreover, a declaration that he is not in possession of the requisite diploma and an overview of the learning path already undertaken.

**NRV:** How do the students finance themselves during their studies?

Given the overall financial and social conditions of refugee students, most of them are likely to pay the lowest tuition fee (105 EUR per 60 ECTS). They are also likely to fulfil requirements for study grants. As we presume that in some cases this grant will not be sufficient, some of them do a part-time job, are living from savings or supported by their family or friends. In some cases, they also can get a loan from the university and can apply for financial support from the Social Services for Students.

**NRV:** After refugee students enter the university, is there any further support to help them to continue and complete their studies?

The university offers individual and group sessions on study guidance (study skills, study methods and planning, time management, etc.) and feedback on exams, legal advice, housing support and so on. The bottom-line is to work towards integration of the refugee students into the student population and, furthermore, into society as a whole, therefore we are planning to set up a buddy system to help them to integrate quicker. As it is the first academic year the programme is offered, we will make an in-depth review in order to evaluate the programme as a whole and to improve it where necessary.

**NRV:** What advice would you give to other European universities that are thinking about setting up similar programmes?

As there are already several universities in almost all European countries who set up a programme for refugee students, we could work together and learn from each other. We could share good practices and exchange ideas for the improvement of our initiatives. On this matter already several platforms are working together, but there are a large number of possibilities to enlarge and to expand. UNICA (an institutional network of 46 universities from 35 capital cities of Europe) can take the lead in this.

**NRV:** What, in your opinion, are the main factors that we need to think about when employing academic strategies for finding solutions to the Syria crisis and helping Syrian refugees?

This is a political issue and a solution is only possible on a solid base in geo-political strategy within the region. Besides the short time solutions, a long term view is imperative. Education is necessary and can help, but is not a solution on itself. Universities and other higher education institutes can offer possibilities to refugees for completing their education, but it is up to them to decide were and how they will take the opportunities that are offered.
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