



United Nations
Educational, Scientific and
Cultural Organization



International Centre
for Technical and Vocational
Education and Training



Global Forum Report

Global Forum on Skills for work and life: post 2015

14 - 16 October 2014, Bonn, Germany

Organized by

UNESCO-UNEVOC International Centre for
Technical and Vocational Education and Training

Supported by



Federal Ministry
of Education
and Research



Federal Ministry
for Economic Cooperation
and Development

Federal Institute for
Vocational Education
and Training

BIBB

- ▶ Researching
- ▶ Advising
- ▶ Shaping the future

giz

Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

The German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry of Education and Research (BMBF), in collaboration with the German Federal Institute for Vocational Education and Training (BIBB), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the German National Commission for UNESCO

For further information please contact:

UNESCO-UNEVOC International Centre for
Technical and Vocational Education and Training
UN Campus, Platz der Vereinten Nationen 1
53113 Bonn, Germany
Phone: +49 228 815 0100
Fax: +49 228 815 0199
unevoc@unesco.org | www.unevoc.unesco.org

Follow us on:

facebook.com/unevoc | youtube.com/unevoc | twitter.com/unevoc

Unless stated otherwise, all photos are copyright of
UNESCO-UNEVOC

Graphics and layout by
Aldrich Mejia, Multimedia Developer
and IT Support, UNESCO-UNEVOC

All rights reserved

© UNESCO 2015

Online: ISBN 978-92-95071-76-6

Print: ISBN 978-92-95071-75-9

Contents

Acronyms and abbreviations	4
Preface	5
Executive summary	6
1. Context of the Forum	9
2. Participation, aims and issues addressed	10
2.1 Aims of the Forum	10
2.2 Issues addressed	10
2.3 Partners	12
3. Report and discussion	13
3.1 Key messages from the opening and closing sessions	13
3.2 Keynote: Progress on skills development in South Africa	18
3.3 Agency perspectives	20
3.4 UNEVOC Network perspectives	25
3.5 Promising Practices	31
4. Parallel sessions	35
4.1 Entrepreneurial skills – Can entrepreneurial success be taught?	35
4.2 School-to-work transitions: perspectives from the informal and formal sector	36
4.3 Private-sector cooperation in TVET – what works?	38
4.4 Greening TVET: policies and approaches for meeting skills for sustainability	41
4.5 Green TVET teaching, learning and training	44
4.6 Skills for inclusive societies	46
5. Fresh TVET outlooks	49
6. Key Messages and summary of the forum	52
6.1 Facilitating TVET transformations using the UNEVOC Network	54
References	55
Exhibition (14–16 October 2014)	56
Study Visit (16 October 2014)	57
Appendix One: Programme	60
Appendix Two: Speakers, chairs and participants	65

Acronyms and abbreviations

BIBB	German Federal Institute for Vocational Education and Training
BMBF	German Federal Ministry of Education and Research
BMZ	German Federal Ministry for Economic Cooperation and Development
CEDEFOP	European Centre for the Development of Vocational Training
CERD	Centre for Educational Research and Development
CIS	Commonwealth of Independent States
DESD	United Nations Decade of Education for Sustainable Development
EFA	Education for All
ESD	education for sustainable development
ETF	European Training Foundation
GDP	gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GMR	(EFA) Global Monitoring Report
GTEV	green(ing) technical and vocational education and training
HEART- NTA	Human Employment and Resource Training Trust – National Training Agency, Jamaica
HRD	human resource development
IAWG	Inter-Agency Working Group
ICTs	information and communication technologies
IHKs	Industrie- und Handelskammern (chambers of commerce)
ILO	International Labour Organization
INA	Instituto Nacional de Aprendizaje, Costa Rica
ITF	Industrial Training Fund
IVETA	International Vocational Education and Training Associations
KAB	ILO Know about Business Programme
KRIVET	Korea Research Institute for Vocational Education and Training
LAC	Latin America and Caribbean
MDG	Millennium Development Goals
MENA	Middle East and North Africa
MITD	Mauritius Institute of Training and Development
NCVER	National Centre for Vocational Education Research, Australia
NEET	not in employment, education or training
NGO	non-governmental organization
NSDC	National Skill Development Corporation, India
OECD	Organisation for Economic Co-operation and Development
PP	promising practices
ppm	parts per million
SAQA	South African Qualifications Authority
SD	sustainable development
SDG	Sustainable Development Goals
SDRE	Society for the Development of Rural Economy
SETA	sector education and training authority
SFIVET	Swiss Federal Institute for Vocational Education and Training
SIDS	Small island developing states
SIWES	Students' Industrial Work Experience Scheme
SMEs	small and medium-sized enterprises
STEM	science, technology, engineering and mathematics
TVEC	Tertiary and Vocational Education Commission
TVET	technical and vocational education and training
UIS	UNESCO Institute for Statistics
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-UNEVOC	UNESCO International Centre for Technical and Vocational Education and Training
UNFCCC	United Nations Framework Convention on Climate Change
UN-SPIDER	United Nations Platform for Space-based Information for Disaster Management and Emergency Response
UNU-EHS	United Nations University Institute for Environment and Human Security
UNV	United Nations Volunteers
VTC	Vocational Training Centre

Preface

The Global Forum Skills for Work and Life Post-2015 engaged stakeholders from all five regions of the world, in identifying future directions in skills development. These directions are deemed necessary to be coherent with the overarching global education agenda and supportive of policy measures and programmatic interventions in the areas of youth employability, skills development and greening skills through Technical and Vocational Education and Training (TVET). The Report of the forum captures the discussions that helped situate TVET as a strategic contributor and a vital platform for achieving the targets of education post-2015. In situating TVET, it is necessary to inform debates on UNESCO's actions in scaling up education for sustainable development (ESD), as well as the strategies of its partners for transforming TVET, on which decent and sustainable work and life for all should be built. The Report also affirms that the transformative vision for TVET set out in the World TVET Congress in Shanghai is achievable, and can draw strength from the post-2015 agenda and global commitment to SD.

The UNESCO-UNEVOC International Centre for TVET acknowledges the support extended to the conference by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry of Education and Research (BMBF), and collaboration of the German Federal Institute for Vocational Education and Training (BIBB), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the German National Commission for UNESCO.

We also extend deep appreciation to the Member States represented and to the various United Nations agencies in Bonn that took part in reflecting collectively the UN's work on sustainable development. Appreciation also goes to partner organizations of UNESCO including the ILO, OECD, ETF, CEDEFOP, IVETA and World Skills International; TVET stakeholders – the public and the private sector, TVET institutions and providers within and outside the UNEVOC Network, industries, social partners and small and medium-sized enterprises (SMEs)– for joining us in sharing your experiences and for creating new avenues for cooperation in TVET.

We give our special thanks to the following who supported the reporting, analysis and reflections during and after the conference: Simon McGrath, Professor, Nottingham University; Kenneth Barrientos, Programme Officer of UNESCO-UNEVOC; Keith Holmes, Astrid Hollander and Katerina Ananiadou, Programme Specialists of UNESCO; Uta Roth and Imke Kottmann, Programme Experts of UNESCO-UNEVOC; Gita Subrahmanyam, Research Associate, London School of Economics and Political Science; and to all UNEVOC staff and interns who supported the Forum.



Shyamal Majumdar

Head, UNESCO-UNEVOC International Centre for
Technical and Vocational Education and Training

Executive summary



The UNESCO-UNEVOC Global Forum 'Skills for Work and Life Post-2015' took up the vital topics of youth, skills and greening TVET in the context of the post-2015 development agenda. 2015 marks the end of the Education for All (EFA) initiative, and global and regional debates are sharpening the focus of discussions geared towards setting concrete recommendations on how the post-2015 education agenda should look like, and how it will be coordinated, monitored and assessed. Technical and vocational education and training (TVET) and skills for lifelong learning feature prominently in these debates.

The post-2015 education agenda is an integral part of the sustainable development agenda. UNESCO advocates an overarching education goal, which is 'to ensure inclusive, equitable quality education and promote lifelong learning for all'.

Underpinned by this advocacy, the forum engaged over 200 stakeholders from 71 UNESCO Member States, including 80 participants from 62 UNEVOC Centres from around the world, in identifying concrete and coherent global directions, policy measures and programmatic interventions in the areas of youth employability, skills development, and greening skills and TVET, as vital to visualizing and preparing for TVET post-2015.

This report summarizes the key discussions and observations during the Global Forum, and creates an understanding of TVET transformations, underpinned by the above issues, in the context of framing the post-2015

Participation overview

Participants: over 200 stakeholders

No. of Countries represented: 71

No. of UNEVOC Centres: 62



Participants of the Global Forum



Participants during study visit

agenda. The Sustainable Development Goals (SDGs) underpinned multidisciplinary discussions at the forum and represented an important step forward in development thinking by bringing together sustainable development with poverty alleviation, inequality and technological change in a holistic account of how people's lives can be enhanced.

The forum re-emphasized the role of TVET as the master key to sustainable development. Combining this with the world vision for TVET outlined at the Third International Congress in Shanghai in 2012, transformative TVET is reinforced as the foundation on which decent and sustainable work and life for all is built.

It tackled issues and opportunities that can be seized in-depth. Youth unemployment stands at over 70 million, and is a global problem that is on the increase rather than decrease. Moreover, many young people who are in employment are stuck in work that is precarious or that does not fulfil them as either workers or human beings. This also has negative societal and economic implications. Interventions are already showing how to ease transitions from school to work by sharing information, building trust and harnessing technological possibilities. Entrepreneurship cannot be the answer to the whole of the young unemployment challenge, but there is much scope for increasing entrepreneurial skills and awareness amongst young people.

Moreover, there is increasingly a call for changing modes of production and new investments in green economies. Economically

viable, socially acceptable and environmentally sound development is required. In this context the rationale for investing in green skills, and rethinking TVET and skills development approaches to achieve this, is clear, both with regard to the interests of present and future generations, and because governments want to seize the potential for job-friendly transitions to green economies and societies. The transition to a greener economy can create new employment opportunities as well as improve skills prospects and youth mobility from one skill level to the next, or one occupation to another. However, experience in many countries has shown that skills bottlenecks can be a serious impediment to green investments and growth. Greening of TVET is taking place through approaches that react to new occupational categories, build green skills into existing occupational training programmes, and generate new resources for staff and learners. There is also a rise in thinking about what green TVET (GTVET) institutions and systems should look like, with some promising practices (PP) emerging on the ground.

TVET systems are called on to respond to these problems, and are in fact making strides in this direction.

In the face of the sustainable development challenge, there is a need to urgently turn ideas into actions. This cannot be done in a top-down way in a number of sectoral silos, but requires intersectoral, multi-level and multi-actor approaches.

The forum concluded by emphasizing that:

Transformative TVET is re-envisioning TVET and its goals. Lifelong learning, inclusiveness, global citizenship and sustainability are the underpinning goals of a modern TVET. TVET must be linked not only with the world of work, but also to creating pathways across education streams, to facilitate transitions to work and to life. TVET needs to offer corridors that expand the provision for traditional skills to meet occupational needs and contribute to the creation of solid knowledge-based societies that provide vulnerable groups with equal opportunities.

Approaches to youth unemployment and greening should go hand in hand. The insistence on sustainability brings new concepts into the work of TVET, as it is charged to promote transversal skills to the same great extent as it trains people in occupation-oriented skills. Youth employability and achieving sustainable development need to be addressed on an integrated manner, and planned intergenerationally. Embedding environmental or green skills in programmes will achieve meeting not only the skills needs in the emerging green jobs of tomorrow but in existing occupations as jobs are greened. A challenge lies in building new partnerships and ways of working that respect the diversity of those involved and the important skills and perspectives they bring to the work of TVET and its interaction with other sectors.

There is a need to invest in mechanisms for identifying the skills requirements of the future. This will necessitate renewed efforts to build labour market intelligence systems that are able to identify and communicate existing skills opportunities and needs through robust partnerships between employers, analysts and training providers. It will require stronger capacities and tools to provide foresight and anticipate change. It will need greater attention to building trainees' ability to learn how to learn.

A focus on transformative TVET for sustainable development requires an insistence on an integrated notion of skills for work and life. The imperative of making TVET transformative was the key message from Shanghai. This means that TVET must not only radically change but must contribute to wider societal change, now given greater clarity by the SDGs. The deliberations at Shanghai made it clear that TVET could not be treated as just a matter of employability and productivity, of equity and inclusion, or of sustainability and well-being. Rather, for TVET to be genuinely transformative, it must combine all three lenses.

This report documents the discussions for further informing the global debate on TVET and the post-2015 agenda. It describes the approach in which the forum utilized cross-regional networking and partnership as platforms to create synergy and make TVET contributions relevant to the fulfilment of the aims of the post-2015 education agenda and its implications for the SDGs.



Global Forum exhibition

1. Context of the Forum



This report documents the discussions for further informing the global debate on TVET and the post-2015 agenda. It describes the approach in which the forum utilized cross-regional networking and partnership as platforms to create synergy and make TVET contributions relevant to the fulfilment of the aims of the post-2015 education agenda and its implications for the SDGs.

The UNESCO-UNEVOC International Centre for TVET took forward the recommendations of the Shanghai Congress by organizing five regional fora in 2013 on the topic of Advancing TVET for Youth Employability and Sustainable Development. The regional fora aimed to reinforce and extend regional networks and partnerships for the advancement of TVET transformation. They focused particularly on two issues.

Youth unemployment is one of the greatest challenges faced by many countries around the world today, and young people are three times more likely to be unemployed than adults. TVET has a key role to play in tackling youth unemployment as it is oriented towards the world of work and the acquisition of employability skills.

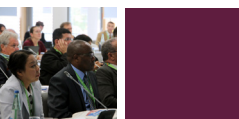
Greening TVET (GTVET) is a response to reorient TVET for sustainable development (SD) and align efforts in the greening agendas for education and work. Climate change, scarcities of resources and global citizenship are drivers for transition into green-oriented growth, to which TVET must adapt. To make a smooth transition, UNEVOC is advancing the greening TVET agenda to contribute to reorienting mindsets and addressing skill shortages or mismatches in the greening of existing jobs and creation of new jobs.

The regional fora provided regional platforms for collecting and sharing knowledge, experiences and promising practices (PP) on these two issues. They took stock of the regional experiences, insights and lessons learned from different stakeholders and across the UNEVOC Network. These were further shared at an inter-regional level through a Global Forum to enrich the rethinking of TVET in line with the post-2015 agenda. Networks and partnerships were geared towards regional harmonization and resource mobilization through the capacities of UNEVOC's unique global network of specialized TVET institutions and affiliated partners.



© UNDP in Europe and Central Asia

2. Participation, aims and issues addressed



The UNESCO-UNEVOC Global Forum 'Skills for Work and Life Post-2015' engaged over 200 stakeholders from 71 UNESCO Member States, including 80 participants from 62 UNEVOC Centres from across the UNEVOC Network¹ in identifying concrete and coherent directions and interventions in the areas of youth employability, skills development and greening skills through TVET.

2.1 Aims of the Forum

The Global Forum on Skills for Work and Life aimed to:

- contribute to and inform the global debate on the vital topics of youth, skills and greening TVET in the context of the post-2015 development agenda
- engage multiple stakeholders in identifying concrete and coherent global directions, policy measures and programmatic interventions in the areas of youth employability, skills development, and greening skills and competencies through TVET
- share cross-regional, multi-stakeholder, multi-level perspectives and draw on an analysis of the results to map a global TVET outlook beyond 2015
- elaborate concrete future interventions through Network and partnership platforms, in particular the UNEVOC Network.

2.2 Issues addressed

2.2.1 The global challenge: youth employability and sustainable development

The world is confronted with the twin challenges of making young people employable and achieving SD. This has substantial implications for education and training systems.

The UNESCO Institute for Statistics (UIS) estimated in 2011 that 123 million young people worldwide lacked basic literacy skills (UIS, 2013), weakening their opportunities to enter further education and training, and subsequently the labour market. There were estimated to be 73 million young people unemployed in 2013 (ILO, 2013). This situation is affecting developing and developed countries alike, despite regional disparities. Nearly one in five young people in Organisation for Economic Co-operation and Development (OECD) countries is neither employed



© UNDP in Europe and Central Asia

¹ The UNEVOC Network is an exclusive global platform for TVET coordinated by the UNEVOC International Centre based in Bonn, Germany. It aims to further mainstream South-South and North-South-South cooperation. The Network is made up of UNEVOC Centres, which are established in TVET institutions in UNESCO Member States and serve as focal points in the provision of services for international and regional cooperation in TVET. The UNEVOC Network regional groupings consist of Africa, the Arab States, Asia and the Pacific, Europe and North America, and Latin America and the Caribbean.

nor attending education or training (OECD, 2014). The trend is similar in many developing countries. Two-thirds of the young population are vulnerable in labour market terms: unemployed, in irregular employment, trapped in informal employment and activities that limit career options, or not in the labour force, education or training. Moreover, projections show this trend persisting: by 2018 the global youth unemployment rate is projected to rise to 12.8 per cent (from 12.6 per cent in 2013). Young people are three times more likely to be unemployed than adults (OECD, 2014). When they are successful in leaving education systems, in most cases their transition to the labour market does not run smoothly because of a skills gap or mismatch, or a lack of available jobs. In many cases, when they are employed, young people are engaged in jobs that do not bring out their full potential or are trapped in low-wage employment. This situation has societal, economic and individual negative implications. It creates social and political instability, preventing economies from realizing the full potential of their labour force, and constraining productivity and economic growth. It ultimately robs youth of the capacity to be productive and enjoy well-being.

Given deep concerns about the sustainability of current development trajectories, there is increasingly a call for changing modes of production and new investments in green economies. Economically viable, socially acceptable and environmentally sound development is required (United Nations, 2002, para. 19). In this context the rationale for investing in green skills² is clear, both with regard to the interests of present and future generations, and because governments want to seize the potential for job-friendly transitions to green economies and societies. The transition to a greener economy can create new employment opportunities as well as present an opportunity to improve skills training and to expand job prospects for the young people. However, experience in many countries has shown that skills bottlenecks can be a serious impediment to green investments and growth (Corfee-

Morlot et al., 2012). The timeliness or the lack thereof with which TVET systems engage with sustainability concerns, and the demand for green skills in particular, can enhance their responsiveness to labour market demand for skills, or widen further the disconnect with the world of work. Given the challenges of making youth employable and achieving sustainable development, while addressing the skills bottlenecks, governments increasingly look at education and skills as an area in which to provide an effective response.

2.2.2 The post-2015 agenda: skills for youth employability and sustainable development

2015 marks the end of the Education for All (EFA) and Millennium Development Goal (MDG) periods, and global and regional debates are now focusing on shaping a new development agenda and a set of global education targets. TVET and skills development feature prominently in these discussions. UNESCO presented at its General Conference in November 2013 a Concept note on the Post-2015 education agenda (UNESCO, 2015). Early in 2014 UNESCO developed a Position Paper on Education Post-2015 (UNESCO, 2014). In this paper UNESCO advocates a single, clearly defined, global education agenda, which should be an integral part of the broader international development framework, and proposes the following overarching education goal: 'to ensure equitable quality education and lifelong learning for all by 2030'. If the global community agrees, this agenda could be used to define measurable targets to which countries could then commit and be held accountable. UNESCO proposes a set of ten targets, organized in six priority areas.

One priority area deals with skills for work and life, and aims to ensure that:

all young people and adults have equitable opportunities to access and complete formal and non-formal technical and vocational education and training relevant to the world of work, as well as lifelong learning opportunities. (UNESCO, 2014, p. 7)

Targets 5 and 6 refer directly to this priority area, advocating an increase in the proportion of young people with relevant knowledge and skills to access decent work, and an increase in the proportion of adults participating in continuing education and training.

2 Defined by the National Centre for Vocational Education Research (Australia) (NCVER) as 'Technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community' www.voced.edu.au/content/glossary-term-green-skills

In addition to enabling access to decent work and the acquiring of knowledge and skills specific to a profession, occupation or trade, it is suggested that the content of learning must promote, among other skills, problem-solving, entrepreneurship and environmental protection skills. It must also foster a desire and capacity for lifelong learning, learning to learn and learning to live together, all of which are essential to the realization of shared prosperity and sustainable development.

The Global Forum, therefore, aimed to address the issue of TVET and skills in an integrated way, encompassing youth skills and competences, upskilling and reskilling of low-skilled youth and adults, facilitating the transition from school to work, ensuring quality learning for all, and recognizing and validating non-formal and informal learning. Among the priorities are to increase the availability of occupational skills where there are currently shortages and gaps, to support the transition to an inclusive and green economy, and to transfer green skills and competences to create societies that adhere to the principles of sustainable development. Further work and consultations on the proposed priority areas and targets are currently under way, the outcomes of which will be submitted to the World Education Forum 2015 in the Republic of Korea.

2.3 Partners

The Global Forum was supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry of Education and Research (BMBF), in collaboration with the German Federal Institute for Vocational Education and Training (BIBB), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the German Foreign Aid Office and the German National Commission for UNESCO.

UNESCO-UNEVOC also partnered with the Didacta Association of the German Education Industry and its members, namely Rexroth Bosch Group, Christiani, FESTO, LD Didactic, Lucas-Nülle and The Cool Tool. Other partners were Connected Schools, Don Bosco Mondo, VHS, DWA, Engagement Global GmbH, Fraunhofer Institute for Applied Information Technology, Leonardo Award, Currenta, Ford Aus-und Weiterbildung e.V., Icon Institute and World Skills Germany.



From left to right: Shyamal Majumdar (UNESCO-UNEVOC), Svein Østtveit (UNESCO), Verena Metze-Mangold (German Commission for UNESCO), Maximilian Metzger (BMBF), Heike Kuhn (BMZ)

3. Report and discussion



3.1 Key messages from the opening and closing sessions

Messages were invited from key players from the host country (the Federal Republic of Germany) and UNESCO to set the tone of discussion in light of the issues raised to be addressed by the forum. The underlying principles of the UNESCO post-2015 agenda and a framework for action were shared at the opening session. The reasons for Germany to join the global community in meeting education and training targets gave an inspiring context at the start of the discussion. The historical success of Germany's own TVET system and the challenges faced by the country, similar in type, though not always in scale, to those of the rest of other Member States in contemporary times, were highlighted.

3.1.1 Opening remarks

Opening comments were made by:

- Shyamal Majumdar (Head, UNESCO-UNEVOC)
- Svein Østtveit (Director, Executive Office, UNESCO, Paris)
- Heike Kuhn (Head of Division, Federal Ministry for Economic Cooperation and Development – BMZ, Germany)
- Verena Metze-Mangold (Vice President, German Commission for UNESCO)
- Maximilian Metzger (Deputy Director General, the Federal Ministry of Education and Research – BMBF, Germany)

Mr Majumdar welcomed delegates to Bonn, a city characterized by a close partnership between the UN agencies that are based on the city, and between them and a number of German government departments and agencies. He reminded the participants that ten years previously, when the world was thinking about education for sustainable development, there was a meeting at UNESCO-UNEVOC that came up with the slogan 'If education is the key for development, then TVET is the master key! This was the Bonn Declaration of 2004. Ten years later, another meeting in Bonn was taking place at a time when the whole world was discussing what the post-2015 agenda would be like. With this in mind, he outlined a number of questions that should form part of the Global Forum deliberations:

- What are the key possibilities of TVET in the post-2015 agenda?
- What needs to be done in order to advance the debate on skills for life and work?
- What are the new roles for UNESCO-UNEVOC and the UNEVOC Network to play post-2015?



Shyamal Majumdar

- How can we meet the challenge of youth unemployment and sustainable development? Are these two tracks or one common path?
- How will all these aims be achieved post-2015?



Svein Østtveit

In Shanghai, there were many requests from UNEVOC Centres³ for evidence-based policy recommendations on how TVET might contribute to SD. This forum, therefore, represented an opportunity to share and learn from network members' experiences in the field of TVET.

Networking and partnerships are key aspects of achieving UNESCO-UNEVOC's goals. There is a real opportunity for sharing experiences, exchanging lessons learned through partnerships and networking among a range of key TVET stakeholders.

Mr Majumdar reiterated the aims of the forum. He concluded: 'The world is not hungry for words and resolutions, it is hungry for action and therein lies the strength of the UNEVOC Network, its work on the ground!'

Mr Østtveit, on behalf of UNESCO Paris, offered his thanks to the German government and its agencies for their longstanding support for the UNEVOC Network. He noted that the world is coming to the end of the fifteen years of EFA and MDG, and looking forward to the next fifteen years. From 2000 to 2015, there were two frameworks: EFA for education and the MDGs for development in general. He noted the very strong intention to have one single post-2015 framework, and welcomed this.

He reported that UNESCO's vision is very much a rights-based one with an emphasis on equity for all. In this respect, the overarching goal for UNESCO is 'Equitable and inclusive quality education and lifelong learning for all by 2030!'

This is supported by seven education targets based on the UNESCO Position paper on Education Post-2015 (UNESCO, 2014):⁴

Target 1: By 2030, at least x per cent of girls and boys are ready for primary school through participation in quality early childhood care and education, including at least one year of free and compulsory pre-primary education, with particular attention to gender equality and the most marginalized.

Target 2: By 2030, all girls and boys complete free and compulsory quality basic education of at least nine years and achieve relevant learning outcomes, with particular attention to gender equality and the most marginalized.

Target 3: By 2030, all youth and at least x per cent of adults reach a proficiency level in literacy and numeracy sufficient to participate fully in society, with particular attention to girls and women and the most marginalized.

³ *Affiliated TVET institutions and formal members of UNEVOC's global network – see www.unevoc.unesco.org/go.php?q=UNEVOC+Centres&context=*

⁴ *A Framework for Action of the UNESCO Post-2015 Education Agenda containing the vision, goal, principles and targets was submitted to the World Education Forum 2015. See the list of up-to-date targets submitted to the WEF at <https://en.unesco.org/world-education-forum-2015/resources/main-documents>*

Target 4: By 2030, at least x per cent of youth and y per cent of adults have the knowledge and skills for decent work and life through technical and vocational, upper secondary and tertiary education and training, with particular attention to gender equality and the most marginalized.

Target 5: By 2030, all learners acquire knowledge, skills, values and attitudes to establish sustainable and peaceful societies, including through global citizenship education and education for sustainable development.

Target 6: By 2030, all governments ensure that all learners are taught by qualified, professionally trained, motivated and well-supported teachers.

Target 7: By 2030, all countries allocate at least 4–6 per cent of their gross domestic product (GDP) or at least 15–20 per cent of their public expenditure to education, prioritizing groups most in need; and strengthen financial cooperation for education, prioritizing countries most in need.

Achieving these global goals for education requires a framework for implementation.

Ms Kuhn noted that the benefits of TVET are many. It is the basis for a life without poverty; it is a means of entering the formal and informal labour market. She stated that, for these and many other reasons, TVET is key for sustainable livelihoods. Therefore, Germany, and BMZ in particular, is a key supporter of TVET, and was very pleased to host the UNESCO-UNEVOC International Centre in Bonn.

She reminded the audience that youth unemployment numbers are staggering. More than 70 million young people are unemployed, leaving them vulnerable. Working towards more cohesive societies requires this challenge to be tackled.

She noted that the President of the EU Commission, Herman von Rumpoy, had stated that fighting unemployment, in particular youth unemployment, remains the highest priority for the European Union. In Germany, the effects of the apprenticeship system have been positive as it has limited youth unemployment. It does this through helping young people achieve training that is suitable for the world of work.

She argued, therefore, that a focus of the Global Forum should be how young people can become key agents for sustainable change. Like UNESCO-UNEVOC, BMZ is focused on helping young people through TVET, which is increasingly focused on green skills, so that they can participate in and contribute to an increasingly green and sustainable society. BMZ is establishing a number of green centres which will provide research and TVET training regarding sustainable development.

She concluded by arguing that all present in the room are heading to the same goal: that is, to help improve the lives of young people in our societies. She said she saw the Forum, therefore, as a crucial platform for open sharing of experiences in overcoming these challenges.

Ms Metz-Mangold stated that the theme of 'Skills for work and life for post-2015' is of utmost importance. Young people are ever more numerous. In 2010 there were some 1 billion people between 15 and



Heike Kuhn



Verena Metze-Mangold

25. However, there are not enough jobs. Indeed, young people are three times as likely as adults to be unemployed. Providing jobs and providing young people with skills and abilities to participate in the labour market are key goals. Yet movements in this direction, especially in developing countries, have been modest. One in four children are not learning basic skills, even though half of these young people spend some six years in school. The quality of education is thus another important subject.

The 2012 EFA Global Monitoring Report (GMR) (UNESCO, 2012) identified that the school to work transition was often difficult. The report identified three types of skills to smooth the transition: technical and vocational skills, transferable skills and foundation skills. All three types of skill need to be developed for all young people.

Ms Metze-Mangold argued that the world is recently becoming more aware of the benefits of high-quality TVET. As 2015 marks the end of the EFA goals, she stated that it is vital for everyone to contribute to the new post-2015 goals. There can be no doubt that education will play a crucial role in the negotiations of the post-2015 goals. TVET must feature prominently in the education goals for the post-2015 period. She concluded by noting that the UNEVOC Network is a powerful tool to facilitate the global debate on TVET, and that the Global Forum was a testament to that.



Maximilian Metzger

Mr Metzger welcomed participants on behalf of BMBF. He noted that TVET has become a forward-looking topic worldwide and UNESCO-UNEVOC is an essential institution in coordinating the debate. He said that TVET today involves much more than providing people with skills for employment. It must always include the policy areas of competitiveness and social harmony.

The dual system in Germany, of apprenticeships and work, is a good example to look at and learn from. The dual system provides a framework for prosperity and social harmony that helps strengthen competitiveness in the long term, particularly the competitiveness of small and medium-sized enterprises (SMEs). In many countries, he noted, we observe a great discrepancy between the need for well-qualified workers, and often extremely high levels of youth unemployment. He suggested that the key to solving this dilemma is to establish a sound basis for providing young people with qualifications. In this respect, many partner countries are considering designing their own training systems based on Germany's dual system. Of course, he noted, implanting the German dual system as it is into other countries will lead to failure. Instead, BMBF strives to accompany partner countries in designing training systems suitable to their own conditions.

He acknowledged that UNESCO-UNEVOC had become an important partner for the Ministry for a number of reasons, not least because it helps identify, collect and disseminate examples of 'good TVET' practice around the world. In addition, he noted that Mr Majumdar had succeeded in revitalizing the UNEVOC Network. For these reasons, BMBF had extended its support to UNESCO-UNEVOC and is committed to strong, long-term budgetary support.

3.1.2 Closing remarks

Closing remarks were made by:

- Reinhold Weiss (Vice President, Federal Institute for Vocational Education and Training – BIBB, Germany)
- Günther Taube (Head, Education, Health and Social Security Division, Deutsche Gesellschaft für Internationale Zusammenarbeit – GIZ, Germany)
- Chaired by Shyamal Majumdar (Head, UNESCO-UNEVOC).



Reinhold Weiss

Mr Weiss thanked the participants for their exchange of experiences. He reminded them that the requirements for TVET worldwide are enormous. We need to tackle low competencies in all countries, both industrialized and developing. We have to acknowledge and address the problem that quality is not there.

He reiterated the argument that 'TVET is the master key'. In this light, TVET exchange is of crucial importance. Germany does not seek to be seen simply as a leader in TVET, but remains committed to learning about TVET improvement, in order to further develop the dual system at home. Challenges in Germany include demographics, especially the ageing society. There is an ongoing need to maintain the attractiveness of TVET in Germany.

Globally, TVET must be an example for the whole learning system. Measurable goals needed to be found and UNEVOC has done so. They are ambitious, but that was necessary. We cannot afford little steps, because there is little time. We must act to improve the standard of living now. We must start better monitoring of the process. Evidence-based policy is needed. TVET must be included in international and national policies. Relevant and successful instruments must be found for each member state, considering their needs, culture and other issues.

Companies need support too: they need a network and a framework. Companies must understand their role and take on their responsibility, while the state must guarantee the quality of training.

We have to look at the working environment everywhere. We need to recognize and ensure the freedom for employees to organize their own work. Moreover, as Mr Joe Samuels (SAQA) said in his keynote, 'Every workplace should be a learning space'. Mr Weiss reiterated that BIBB is committed to supporting UNESCO further in the TVET field.

Mr Taube noted that probably many participants agreed that TVET faces challenges. Supply-side TVET is considered second-best by governments. It is underfinanced and such TVET systems have limited impact on labour markets.

There are growing challenges that require an improved TVET response, including rising populations, youth unemployment and the danger of political unrest. TVET must be made more relevant and attractive. A flourishing economy must be there of course: growth and employment are needed. An enabling environment and good labour market policies are needed. Employability needs to be supported through TVET systems,



Günther Taube

and promoted through start-ups. Finally, the matching of supply and demand is needed.

On behalf of GIZ, Mr Taube concluded by extending thanks to Mr Majumdar and UNEVOC. He commented that the Forum was an excellent opportunity to contribute to the global debate.

In closing the Forum, Mr Majumdar stressed that partnership is most important: it is the way forward. We must turn ideas into action. We need not to compete but to complement each other. We need both a top-down and a bottom-up approach. The MDGs were not universal. They ignored SD. We are combining greening and supporting youth at same time. Capacity-building is important. We also need to acknowledge the significant role of the private sector.

He concluded by thanking all panellists and everybody involved. He particularly thanked the German government and its agencies for their continued support of UNESCO-UNEVOC's work.



Joe Samuels

3.2 Keynote: Progress on skills development in South Africa

- Joe Samuels (Chief Executive Officer, South African Qualifications Authority)
- Chaired by Borhene Chakroun (Chief, UNESCO Youth, Literacy and Skills Development Section)

Given the huge attention given to skills development in South Africa since the first democratic elections in 1994, and major developments such as the establishment of the first full-scale national qualifications framework, the experience of South Africa provides a classic context in which to look at the issues faced nationwide, and in particular how the economy is addressing the issues of youth employment and sustainability. As a young democracy, South Africa is dealing with the legacies of the past and adapting to very new challenges. It suffers from the triple problems of poverty, unemployment and inequality. Forty-eight per cent of the population live below the national poverty line and life expectancy is only 57 years. Unemployment is between 25 and 40 per cent, depending on the definition used, with 70 per cent of the unemployed having 12 years or less of schooling. There are 3.4 million young people aged between 15 and 24 not in employment, education or training. Unemployment among African and coloured youth increased from 2008 to 2014, whereas Indian-origin and white South Africans saw their unemployment rates stay the same or slightly decrease over the same time period.⁵ Moreover, 51 per cent of the population of 53 million people are below 25 years old.

Against this background, the South African government drafted a White Paper for Post-School Education and Training (PSET) (Republic of South Africa, 2014) that sets out a vision for South Africa until 2030 to build an expanded, effective and integrated post-school system.

⁵ As part of its commitment to overturning racialized inequality, the South African government continues to collect statistics broken down by the four main racial categories of the Apartheid era. African in this context means those of predominantly black African descent; coloured reflects a wide range of people of mixed race descent, including strong Malay and Khoisan heritages; Indian covers most Asian origins but reflects the presence of a large population that descends from migrants from the Indian sub-continent; while white incorporates both new immigrants and an Afrikaner population that has been resident in South Africa for more three centuries.

The White Paper clearly acknowledges that the South African economy does not generate enough jobs, there are not enough places for people to study, and the quality of education is not always the highest. There is a disconnect also between the training system and the education system, and the White Paper tries to deal with all these issues. It has several objectives:

- to build a post-school system for a democratic South Africa
- to build a single, coordinated system that delivers social justice against poverty, inequality and unemployment
- to improve access, quality and diversity of provision of education
- to strengthen relationships between institutions and the workplace
- to make education and training more responsive to a dynamic economy in South Africa.

At present, the post-secondary education and training system includes twenty-three public universities and fifty public further education and training colleges, as well as other public training institutions under other ministries (such as police and agriculture colleges) and a large number of (typically small) private providers. It also includes overarching regulatory bodies, with the South African Qualifications Authority (SAQA) at the apex, and professional and sectoral skills organizations.

The targets of the White Paper, by 2030, include:

- 1.6 million students in public universities
- 2.5 million in TVET colleges ⁶
- 10 million in community colleges ⁷
- 500,000 in private institutions.

The challenge for TVET institutions is to make them attractive so that they become institutions of choice. This requires that the state and the institutions change perceptions of what TVET colleges are. It is vital to strengthen partnerships with industry, and also with other

⁶ These are essentially the existing further education and training colleges.

⁷ A new type of institution that will focus more on the basic needs of communities.



Panelist with youth representatives from Germany and Uganda

stakeholders. To achieve this, the quality and relevance of courses must be strengthened and improved. Mr Samuels argued that people will not look favourably on TVET institutions if their quality is not good or if they do not provide skills that make people effective in the labour force.

There is a plan to create a South African Institute for Vocational Education and Training to provide research in order to strengthen, accompany and monitor and evaluate TVET colleges and institutions. The Institute would also help develop improved curricula.

To link education providers with the workplace, the White Paper sets out targets for 30,000 additional artisans a year by 2030. It also contains a vision of expanded and deepened forms of on-the-job training so that 'every workplace is a learning space'. The National Skills Fund will continue to ensure that skills development is aligned with national development strategies, using levy-grant funds to shape the system.

REFLECTIONS

At the system level, the White Paper for Post-School Education and Training (PSET) builds on the official notion of the South African developmental state, and the skills system is held to be a key vehicle for delivering the developmental state notion. At the apex of governance, the existing National Skills Authority, with wide stakeholder membership, will

sector education and training authorities reformed and strengthened. The existing twenty-three (SETAs) will be concentrated into six SETAs, which will be easier targets for capacity development. The Department for Higher Education and Training is developing a skills planning methodology that uses occupations as the focus for integration.

In spite of twenty years of efforts, there are still very major challenges ahead for South Africa, and there is a realization by the state that the rate of progress needs to be accelerated. The White Paper reflects a serious critical reflection on the past twenty years of trying to transform the skills system in order to meet social and economic objectives, and offers a plan for how to continue and accelerate efforts towards these goals.

3.2.1 Youth reflections

Youth reflections were heard on the multifarious issues and challenges facing the sector. One such challenge highlighted was the deficiency in training provisions and opportunities for the young people and communities in the rural areas. TVET institutions are mostly based in urban centres, which make it difficult for institutions to reach out and for young people to access training centre services and accelerate rural development. This is the case in countries like Uganda. In contrast, issues related to investing in teacher education and understanding distinct differences in existing VET initiatives in different countries are some of the areas of interest for some young people.

Asked where the gaps are in existing education and training provisions affecting the young people, youth representatives expressed concern about the fit of the skills in which they are trained with the job market, and the possession of skills that give them the confidence to create jobs or enterprises when waged jobs are not readily available to them. Quality aspects of TVET and low youth participation are other concerns that give the young people of today a blurry vision of the post-2015 education and training environment.

3.3 Agency perspectives

Although UNESCO has a key role to play in supporting the delivery of better skills for work and life as the United Nations' specialized agency for education, this is not an activity that falls to UNESCO alone within the world of multilateral agencies. Crucially, skills development has always been a joint mandate between UNESCO and the International Labour Organization (ILO). Increasingly, both agencies have sought to cooperate more effectively with other key multilateral actors in the field, including the OECD, the European Training Foundation (ETF), the European Centre for the Development of Vocational Training and the regional development banks.

UNESCO-UNEVOC is one of a large number of UN agencies that have offices as part of the UN Campus in Bonn. As part of the wider OneUN initiative, these agencies are looking for opportunities to collaborate. The particular set of agencies present in Bonn means that collaboration around human resources development and sustainable development is potentially one way of progressing the OneUN agenda in Bonn. Perspectives from five UN organizations based in Bonn were shared during the discussion.

3.3.1 HRD for Sustainability Post 2015: OneUN in Bonn

- Shyamal Majumdar (Head, UNESCO-UNEVOC)
- Amanda Mukwashi (Chief, Volunteer Knowledge and Innovation Section, United Nations Volunteers – UNV)
- Lindle Lindow (Coordinator of Administrative and Finance Services, United Nations Convention to Combat Desertification – UNCCD)
- Nick Nuttall (Coordinator for Communications and Outreach, United Nations Framework Convention on Climate Change Secretariat – UNFCCC)
- Juan Carlos Villagrán de León (Head, United Nations Platform for Space-based Information for Disaster Management and Emergency Response – UN-SPIDER)
- Chaired by Marc Jan Eumann (State Secretary, Ministry for Federal Affairs, Europe and Media of North Rhine Westphalia, Germany)



From left to right: Juan Carlos Villagrán de León (UN-SPIDER), Lindle Lindow (UNCCD), Marc Jan Eumann (Ministry for Federal Affairs, Europe and Media, NRW, Germany), Amanda Mukwashi (UNV), Shyamal Majumdar (UNESCO-UNEVOC), Nick Nuttall (UNFCCC)

There is a new realization that human resources development (HRD) is key to development overall. Thus, issues of HRD are of importance to all UN agencies. The presence of a range of UN agencies in Bonn has opened up new opportunities to think about such issues in a collective way. In line with the overall theme of the event, the presence in Bonn of key UN structures engaged with SD issues offers the potential for a particular focus on HRD needs for SD.

From a UNESCO-UNEVOC perspective, it has always been clear that TVET is central to SD. TVET thus becomes a key vector for the delivery of sustainability skills.

For UNFCCC, it is apparent that skills and employment together form a critical challenge across the globe. From a climate control perspective, it is clear that much growth historically has been achieved by trying to increase the efficiency of labour through reductions in wages and through labour shedding. However, there is a need to think

urgently about how to use natural resources in a more efficient way. There are signs of real progress: China is employing 1.7 million workers in renewable energies and has firm plans for another 6 million jobs in this area. However, there still needs to be a clear global pathway to climate neutrality, reflected in national plans. This will involve a variety of new jobs, and this work must be decent and sustainable. TVET is a key factor in this, since without the right skills, climate change targets will not be achieved. Indeed, there are real opportunities for TVET, as achieving climate control will create many jobs or enhance the traditional jobs that exist.

The work of UN-SPIDER itself requires high-level skills. However, in the broader area of disaster management, it is clear that a wider range of skills will continue to be of vital importance. New synergies with the work of UNEVOC are a real possibility. Equally, for UNCCD, combating desertification requires skills that can facilitate the maintenance and restoration of land, soil and water supplies. This inevitably brings opportunities for TVET.

Volunteering is a way to build the employability of young people, the other main theme of the Global Forum. Volunteering increases skills, gives people experience and contributes to their wider development. A good example is from Burkina Faso. In 2007 the government initiated a volunteering programme that resulted in the mobilization of over 13,000 young people. More than 60 per cent obtained decently paid jobs following their volunteering experience.

Another example, which really highlights volunteering for youth employability and sustainable development, is from Brazil. Following a major storm in 2009, 'living schools' brought thousands of young people to learn about climate change. The next time a storm of this scale happened, they mobilized to build shelters and provide other support to those affected. UNV is working with volunteers, mobilizing them at national and international levels to support the rest of the United Nations structure. It also supports member states to come up with an enabling environment for volunteering. It encourages member states to consider what policies and technologies will enhance creativity and youth enablement.

The session made it clear that it is important to think of responding to HRD in a transformed way. TVET need not be constrained to the old and traditional concept that shaped its present image, as a last resort for underachievers. Rather, TVET needs to venture into new paths in order to attract young people to the endless opportunities in TVET and create new grounds to enhance the content, purpose and diversity of skills. The economic and scientific dimensions of the United Nations mandate remain important. However, there is a need to think more in terms of social equity, empowerment, SD and global citizenship. Moreover, it is

apparent that initiatives cannot simply be scaled up as was done in the past. Rather, there is a need for a transformative and broad HRD-oriented approach that could break the barriers to learning and increase the pathway for young people to become socially, economically and environmentally responsible and empowered citizens.

3.3.2 Beyond the ESD Decade: The Inter-Agency Working Group on Greening TVET and Skills Development

- Cristina Martinez (Advisor, Knowledge Sharing Alliance, Organisation for Economic Cooperation and Development – OECD)
- Anastasia Fetsi (Head, Thematic Expertise Development Department, European Training Foundation – ETF)
- Kazutoshi Chatani (Skills Development Officer, International Labour Organization – ILO)
- Nicholas Sofroniou (Expert, Socio-economic Research and Analysis, European Centre for the Development of Vocational Training – CEDEFOP)
- Shyamal Majumdar (Head, UNESCO-UNEVOC)
- Chaired by Borhene Chakroun (Chief of YLS Section, UNESCO)

UNESCO-UNEVOC works closely with external partners that share a common agenda on strengthening the greening skills and institutions agenda of TVET. Since 2012, an inter-agency collaboration has been instituted to bring together expertise from a wide range of international organizations working in the



From left to right: Cristina Martinez (OECD), Borhene Chakroun (UNESCO), Shyamal Majumdar (UNESCO-UNEVOC), Nicholas Sofroniou (CEDEFOP), Kazutoshi Chatani (ILO), Anastasia Fetsi (ETF)



Cristina Martinez

field of TVET, skills development and the green transformation of society and the economy. The aim has been to strengthen existing coordination channels through advocacy, knowledge and sharing good practices.

As part of this coordinated work, members of the Inter-Agency Working Group (IAWG) shared information about relevant initiatives within the broader

global green growth and skills development framework.

OECD launched its green growth strategy in 2007. Since then, it has done considerable work to create indicators to measure green growth initiatives. In particular, four initiatives were highlighted:

- A Knowledge-Sharing-Alliance, which was created in 2013 between OECD, BMZ and the Ministry of Strategy and Finance in the Republic of Korea;
- A Green Skills Forum between OECD and CEDEFOP – a regular forum to discuss the topic of green skills;
- Collaboration with the Donor Committee for Green Growth, which works on policies for the private sector. It recently completed a report on SMEs and how they promote green growth and inclusive development in India;
- Horizontal projects on climate change. These articulate the challenges and opportunities related to the transformation of economies in light of the transition to low-carbon models of growth.

ETF is an agency of the European Union with a focus on TVET. Its geographic coverage is the 'European neighbourhood': that is, the Commonwealth of Independent States (CIS), the Middle East and North Africa (MENA) and EU accession countries. The objective of ETF's work is to support partner countries to build TVET systems with the aim that the human resources they develop can promote SD. Its main focus is on capacity development to support system development.

ETF's approach in relation to GTVET is to introduce the idea of greening TVET to the core of its work. When ETF helps set up and design TVET systems in its partner countries, this implies a strong emphasis on greening TVET. It is not that a TVET system is established and then efforts to 'green it' are undertaken. Presently, there are many initiatives for GTVET, but they are scattered and incoherent. It is vital that green skills and inclusive growth are embedded in the design of TVET systems from the start.

Awareness-raising is a key element of this. ETF is seeking to help relevant actors and institutions in its partner countries to come to a common understanding about terms such as green growth, green skills and GTVET. Some key players do not even know to what these words and terms refer. Thus, building an understanding of these concepts stands as a key priority.

ETF began by thinking about core terms and their implications for its partner countries. For example, what does green growth mean for country X? What are green jobs? How do we develop more green skills? The entry points at which these questions are addressed are:

- Policy development: local economic development and how TVET can become a force for bottom-up transformational development. How can local assets be used in an environmentally friendly way?
- The operational level: identifying new skills and occupations across various sectors (such as energy literacy and organic agriculture);
- Schools: very often we speak about responsive TVET systems. So when we think about schools, this is an opportunity to be very proactive. A school is an institution and we need to think about the challenges and possibilities of institutional development.

The ILO is engaged in a range of activities on green skills, including:

- a project on technical education and cooperation that anticipates the need of training and includes the ideas of sustainable development and inclusive growth



Anastasia Fetsi

- interagency collaboration on a partnership for green growth: ILO organized a two-week training module for policy-makers on green growth
- work with member countries to strengthen apprenticeship systems that incorporate TVET requirements
- efforts to address the specific needs of member states: for instance, Indonesia has moved from knowledge production to capacity-building by offering training programmes.



Kazutoshi Chatani

The ILO tries not to make greening TVET a top-down initiative. Thus, it seeks to involve and encourage local actors in all greening TVET actions, down to the level of factories.

CEDEFOP's principal aim in this area has been to develop instruments that help look at examples of good practice. There are two key policy drivers in the European Union: the financial crisis that began in 2008, and climate change. In order

to avoid an increase of global temperature of 2 oC, the European Union has developed a 20/20/20 strategy: 20 per cent reduction in carbon emissions, 20 per cent increase in renewable energy and 20 per cent increase in energy efficiency. All this will have a sizeable impact on the labour market and the types of job available. This is just a start because the European Union has declared that an eventual 80 per cent cut in CO2 emissions will be necessary.

Overcoming 'greenwashing' concerns requires empirical evidence and statistical data. Once people see the effects of climate change, and the need for new types of skill, they will not remain as sceptical. Therefore, CEDEFOP has been working to develop a skill-forecasting model for various occupations using econometric methods that can respond to the likely labour market changes. The overarching questions are how to measure green skill gaps and how to prevent skills mismatches as economies make structural changes in the light of climate change. In 2013, CEDEFOP conducted a policy study using econometric analysis to project the sorts of skill required to meet the demands of various types of growth, both high-carbon and low-carbon. The ultimate

aim of this was to help young people become more aware of the skill needs of various professions and occupations. It created a 'skills panorama' that surveys jobs as they are posted online to distil their skill requirements so that careers counsellors and individuals alike can be more aware of the sorts of skill currently in demand on the market.



Nicholas Sofroniou

UNESCO-UNEVOC is contributing to the green skills agenda in four ways. First, at the macro policy level, UNESCO-UNEVOC is proposing a 'whole institution transformation' with five pillars for Greening TVET. Some countries (South Africa, Philippines, Viet Nam, Jamaica) have kick-started a process of implementing an element or a comprehensive whole-institution transformation based on the five pillars (green campus, green curriculum, green research, green community and green culture). Second, it is engaged with evidence-based policy practice in collecting and disseminating promising practices. Third, two activities have taken place on the e-forum on greening TVET, which have served as a means of capacity-building. Fourth, it has been engaged in improving networks on sustainable development.

REFLECTIONS

At national policy level, however, there remains a lack of coordination between actors. This fragmentation at the level of inter-ministerial coordination leads to bottlenecks in implementation.

Individually and together the IAWG members have been creating opportunities for wider understanding of green skills and TVET through efforts to coordinate debate around these issues and facilitate capacity-development interventions as well as knowledge-sharing. Within each of individual member's action frameworks, an evidence base on greening TVET is being built. However, much more is required, in both skills forecasting and innovations that work in supporting green skills development. For better outcomes of coordination, developing a common terminology that can address the

differentiated meanings and understanding of green skills, jobs, economies and what they mean to TVET may offer an important step forward.

Crucially, the panel discussion shows that greening TVET should not be seen as something that needs to be initiated from the environment sector. It should also be raised from the education, economic, employment or indeed any other perspective that establishes the interlinkages between and among sectors. Nor should it be top-down. Communities can and do play a key role in building up partnerships, mobilizing local human resources and advancing transformations from the ground up based on local needs.

When it comes to addressing the bottlenecks to systematic implementation and translation of green-oriented initiatives into action on the ground, policies need to be cascaded and promoted to increase an understanding of the extent of implication they have at sector, community and national level.

3.4 UNEVOC Network perspectives

At the heart of the Global Forum is the UNEVOC Network, with most of the participants coming from UNEVOC Centres. The Global Forum built on a series of regional UNEVOC Network events, as detailed in the next subsection, and included reporting back on those activities. As was noted above, the UNESCO-UNEVOC International Centre has also been collating PP from Network members on the issues of greening skills and addressing youth employability. A selection of these was also presented as part of the Global Forum. This discussion of PP was extended through a series of parallel sessions where Network members and others presented further cases of PP in these two areas.

3.4.1 Transforming TVET through the UNEVOC Network

- Gita Subrahmanyam (Research Associate, London School of Economics and Political Sciences, UK)
- Chaired by Katerina Ananiadou (Programme Specialist, UNESCO-UNEVOC)

The Shanghai Congress invited UNESCO's Director-General to seek to implement the following actions using UNESCO-UNEVOC, the global UNEVOC Network, and UNESCO Chairs active in the field: collect and disseminate evidence demonstrating the multiple and diverse policy approaches for transforming and expanding TVET; expand and enhance the capacities of the UNEVOC Network to play a key role in developing the capacities of decision-makers and practitioners; and facilitate the involvement of all stakeholders.

It is clear the TVET faces a series of future challenges, including:

- emergence of knowledge societies
- rapid spread of information and communication technologies (ICTs)
- effects of the global financial crisis
- implications of climate change and demographic trends
- emergence of new, often higher-level TVET skills.

How the UNESCO-UNEVOC International Centre and the global UNEVOC Network should respond to these challenges was addressed at an International Forum held in November 2012 and a regional consultation workshop held in March 2013. This led to the organization of five regional fora in 2013 on the topic of 'Advancing TVET for Youth Employability and Sustainable Development' which attempted to reinforce and extend regional networks and partnerships for the advancement of TVET transformation towards regional harmonization and resource mobilization. The regional fora provided a platform for sharing knowledge, experiences and PP in TVET, focusing on greening TVET and skills development for promoting youth employability.



Gita Subrahmanyam

Five forum reports were produced, and PP on the two topics were collected and synthesized. The reports identify trends and patterns that emerged; assess the progress that countries/regions have made in using TVET as a tool for advancing youth employability and SD, as well as the gaps or challenges they still face; and highlight the factors that may assist countries/regions to overcome outstanding issues. The exercise took stock of and analysed the experiences, evidences of practice and lessons learned. It brought forward the common threads in each of the regions, and drew out recommendations for the conceptualization and transformation of TVET in light of the post-2015 education agenda.

3.4.2 Overview of progress, promising practices and challenges

On this basis, the synthesis progressed into a modest mapping of regional progress. Each region's unique approach to skills development and progress in addressing the twin challenges of youth unemployment and climate change was discerned by assessing how far the PP presented at the regional fora fulfil the seven key recommendations of the Shanghai Congress⁸ and what challenges remain to be addressed.

⁸ The Shanghai Consensus gives seven recommendations for action: (i) enhancing TVET relevance, (ii) expanding access and equity, (iii) improving quality, (iv) adapting qualifications and developing pathways, (v) improving the evidence base, (vi) strengthening governance and partnerships, (vii) increasing investment in TVET and diversify financing and (viii) advocating TVET. (More info is on www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/concensus-en.pdf)



Delegates during one of the study tours

Latin America and Caribbean (LAC) region

Number of PP: youth & skills (7); greening TVET (5).

Progress overview and promising practices

The PP indicate that recent reforms in the region have emphasized enhancing TVET relevance and quality, and gathering evidence on the future skills needs of employers. To advance youth employability, governments across the region have developed national and/or regional qualifications frameworks and promoted competency-based approaches and work-based training. Measures have also been put in place to raise TVET quality through the training of trainers and external evaluation. In line with SD goals, TVET curricula across the region have been greened, with GTVET measures based on research regarding the knowledge, skills and competences required for green jobs, and with inputs from a wide range of partners, including local communities.

Challenges and lessons learned

Low perceptions of TVET pose a challenge in the LAC region, where lack of resources combined with poor technical capabilities impede qualitative improvements that could raise TVET's image. While the solution could be greater industry involvement in TVET design and delivery, across the region there is general mistrust of the private sector. Future interventions should be based on creative strategic partnerships, involving not only the private sector but also educational institutions and civil society organizations. There should also be more networking opportunities for sharing good practices between TVET colleagues across the region. When it comes to sustainability orientation, there is a wide awareness in schools. Efforts to extend this awareness and cultivate PP in the informal sector are also observed.

Asia and the Pacific region

Number of PP: youth & skills (4); greening TVET (4).

Progress overview and promising practices

The focus of recent TVET reforms has been on improving relevance, adapting qualifications and widening access. To increase young people's employability, TVET institutions now offer dual training as well as career guidance and support based on current labour market information. Some countries also formally recognize prior learning and skills that young people have gained in informal settings. Greater use of ICT and private-sector involvement in TVET design and delivery have widened access to TVET, and in some cases also improved equity. To support SD goals, TVET institutions, in conjunction with industry partners, gather evidence on the knowledge, skills and competences required for green jobs. This information is used to green the curriculum.

Challenges and lessons learned

Quality issues affect the Asia and Pacific region despite significant expansion of TVET in the region. These have led to negative perceptions of TVET. The main causes are lack of resources, which has affected the quality of teaching resources and infrastructure, and a growing youth population affecting access to education. These issues are already being addressed through greater use of ICT and private-sector funding of TVET. However, more needs to be done to improve TVET's quality and image, especially when addressing the emerging formal sector demography.

Africa region

Number of PP: youth & skills (5); greening TVET (5).

Progress overview and promising practices

The PP suggest that the emphasis of recent TVET interventions has been on enhancing relevance, adapting qualifications and improving equity. To promote youth employability, TVET institutions across the region have implemented measures to improve young people's school-to-work transitions by offering comprehensive entrepreneurship education; adopting a competency-based approach with a practical work-based component; ensuring the portability of graduates' skills through developing national qualifications frameworks; and formally recognizing skills gained in informal settings. Training relevance has also been improved through stronger partnerships with industry and improving teachers' knowledge of current industrial technologies. To advance SD goals, TVET curricula across the region have been 'greened', with inputs from a range of stakeholders to ensure programme relevance and quality. GTVET programmes have been designed so that their benefits spill over to disadvantaged groups and regions, leading to improved equity and inclusion.

Challenges and lessons learned

Low public financing, insufficient involvement of the private sector in the design and funding of TVET programmes, and poor coordination of donor and international development partners' activities have affected the quality and status of TVET in the region, so steps need to be taken to raise quality. However, a shortage of well-trained teachers and the absence of accurate labour market information in most African countries constrain efforts to improve TVET quality and effectiveness. Additionally, TVET in Africa needs to be further adapted to informal settings.

Europe, CIS and North America region

Number of PP: youth & skills (6); greening TVET (4).

Progress overview and promising practices

The PP suggest that the main focus of recent TVET reforms in the region has been on enhancing relevance, expanding access and improving equity. To promote youth employability, TVET providers have sought to overcome skills mismatches by emphasizing entrepreneurship and on-the-job training. They have also made greater use of ICT to increase flexibility and thereby improve access and equity. To advance the SD agenda, TVET curricula across the region have been 'greened', with key stakeholders involved in TVET design and delivery to ensure the quality and relevance of training.

Challenges and lessons learned

Despite encouraging trends in the region such as expanding employment stability through skills provisions, quality of training is an issue, especially in Eastern Europe. Recent TVET reforms have focused on enhancing relevance, while other aspects of quality have not been directly addressed. Poor-quality training has affected the image of TVET, which is viewed as preparing students for 'dirty work' rather than for 'high-tech, smart work'. Hence, students and parents prefer general education to TVET. Future TVET interventions should focus on raising TVET's quality and prestige.

Arab States region

Number of PP: youth & skills (8).

Progress overview and promising practices

The PP presented at the Arab States forum suggest that the region's main focus has been on enhancing relevance. Slow job growth across the region makes entrepreneurship education a powerful means of providing young people with a pathway to employment. Some countries have sought to improve young people's employability by developing students' life skills and offering career advice and counselling. Others have focused on improving quality through training of teachers and trainers, and through regular monitoring and evaluation. All of the PP involve a wide range of partners to ensure the relevance and quality of training.

Challenges and lessons learned

The effectiveness of TVET interventions in the region is constrained by a shortage of well-trained instructors with pedagogical skills and practical experience, as well as a low emphasis on continuing education to assist teachers and trainers to keep pace with new developments. Therefore, in future there is a need for more measures directed towards training teachers and trainers. Across the region, theoretical university qualifications tend to be overvalued, resulting in skills mismatches and high youth unemployment. Future interventions should therefore focus on advocating the use of TVET.

A more detailed outcome of the global synthesis report is available on the UNESCO-UNEVOC website under [Publications/Meeting Reports](#).

REFLECTIONS

Across every region, the UNEVOC Network has made progress in using TVET to address the challenges identified during the Shanghai Congress. PP presented at the fora provided an indication of the kinds of forward-looking measure that countries in each region have implemented to strengthen TVET's role in promoting youth employability and SD. All regions have made strides to improve their evidence base and their practices regarding identifying, delivering and assessing competences for green jobs. However, the fora also reported a number of common challenges. These include a widespread negative perception of TVET, inadequate funding and a lack of well-trained teachers and trainers. While some countries have made significant progress in anticipating the transformative possibilities for TVET, others lag behind. For these, structures such as the UNEVOC Network offer real opportunities to accelerate their responses.



Participants during the session

Sustainable development and youth employability: convergent aims

The two themes of this Global Forum need to be seen as interlocking. A GTVET agenda has the potential to capture the imagination of young people and make them better engaged with TVET. At the same time, embracing SD offers governments the prospect of grasping a green jobs premium, thus reducing youth unemployment. Training young people in greener skills through TVET also has the potential for changing workplace cultures over time. Greening TVET can create a virtuous circle that promotes both youth employability and sustainable development in a powerful, synergistic and internally consistent manner.

Multi-stakeholder partnerships

Partnerships and networks are key to TVET's successful future. The multifaceted nature of TVET necessitates that institutional, national and global policies are developed and implemented through multi-stakeholder partnerships. These must involve the public and private sectors, employers, providers, teachers and learners. Research and research capacity-development are also built through partnerships. The UNEVOC Network can play an important role in this respect, through North-South, South-South and triangular cooperation. It has an important role to play in the cross-fertilization of ideas among countries and regions globally, including through the facilitation of joint research projects involving UNEVOC Centres from the North and the South.

Private sector engagement

The private sector must be involved in all aspects of TVET policy planning and implementation, including curriculum design and setting standards and qualifications. It has an important role to play in the successful transition of young people from school to work, by facilitating the gaining of work experience by young people, through quality apprenticeships, work placements, internships and so on. It must be remembered that the private sector is diverse, and care must be taken to avoid the exclusion of certain elements of the private sector from deliberations.

Innovative financing

New approaches to financing need to be developed that balance improved efficiency with equity and sustainability. This is likely to require diversification of funding sources.

Skills forecasting and monitoring

TVET cannot be effective and relevant if it has little sense of current and potential future labour market trends.

Therefore, strong labour market intelligence systems are required at institutional, sectoral, national and international levels. These will also require multi-stakeholder partnerships, between researchers, governments and employers, but also internationally. Such information needs to feed quickly into new curricula, occupational standards and careers advice.

The informal sector

More than half the workforce in many countries of the South is working informally, in non-registered firms or non-registered jobs in formal firms. Informal work may be highly skilled and well paid but it is more often fragile, dangerous and cut off from access to formal skills-upgrading opportunities. TVET that builds from the realities of informal work but imagines a better working future can make a significant difference to the lives of those working informally.

Improving TVET's image and quality

Some TVET in some settings is very highly regarded by employers, learners and society, but much is subject to negative perceptions. Improving TVET's image cannot simply be a matter of better marketing but must be grounded in the improvement of the quality of provision and of labour market and societal outcomes. Better TVET institutions and systems are clearly important to this quest. SD principles need to be embedded into TVET structures and processes to improve learning outcomes and contribute to long-term behavioural changes.

Lifelong learning

To improve social equity and cohesion, tackle unemployment, and increase the percentage of the population committed to SD, targeted and tailored training programmes need to be available to all groups at every stage of life.

Small island developing states (SIDS)

SIDS face their own particular sets of challenges and opportunities with regard to achieving sustainable development and skilling their youth for employment. The UN Third International Conference on SIDS held in September 2014 in Samoa emphasized the role of successful multi-stakeholder partnership dialogues for SIDS, including sustainable economic development and social development, which are of particular relevance to TVET.

3.5 Promising Practices

As part of its clearinghouse function, and following the call issued at the Third International TVET Congress held in Shanghai in May 2012 for an enhanced role of the UNEVOC Network in the collection and dissemination of knowledge and evidence on TVET, UNESCO-UNEVOC sought to identify and share promising TVET practices for the benefit of the global TVET community, including policy-makers and practitioners. These are presented in a UNESCO-UNEVOC database around the two themes of youth employment and greening TVET. A flavour of this rich set of resources is presented below through reports on two panel discussions.

Youth employment

- Angelika Puhlmann (BIBB, Germany)
- Oussama Ghneim (Centre for Educational Research and Development – CERD, Lebanon)
- Natalee Plunkett (Human Employment and Resource Training [HEART] Trust – National Training Agency [NTA], Jamaica)
- Sola Aliu (Society for the Development of Rural Economy – SDRE, Nigeria)
- Janaka Jayalath (Tertiary and Vocational Education Commission – TVEC, Sri Lanka)
- Chaired by Michaela Baur (Head, TVET and Labour Market, GIZ)

BIBB has developed a vocational orientation programme designed to support young people in Germany in finding their vocation: a form of vocational education in action. It is too late to start with career orientation when young people leave school. Moreover, too much career guidance is one-way communication, telling students what to do. Instead, there should be two-way communication, and young people should be able to have more say in their career choices.

The programme gives young people the chance to make a more informed choice about their career paths. In evaluations the students say that they feel much better prepared for making career choices and shaping their future. There is also a positive gender effect, as girls are



From left to right: Katerina Ananiadou (UNESCO-UNEVOC), Oussama Ghneim (CERD), Angelika Puhlmann (BIBB), Michaela Baur (GIZ) Natalee Plunkett (HEART Trust NTA), Sola Aliu (SDRE)

given choices in male-dominated areas. It is possible that this could be implemented in other countries, and BIBB could help support countries that are interested in adapting the programme.

CERD leads an entrepreneurship project in Lebanon that focuses on supporting schools to build their learners' entrepreneurial skills. Partnership is key to success in such programmes. In this case, there had been collaboration between the ministry, firms, local government, NGOs and TVET providers in order to develop a programme. Thirty teachers from general and vocational schools were trained in a new methodology, and they in turn supported students. It is planned that in future, modules on entrepreneurship education will be developed and introduced into the curriculum at both public and NGO training centres.

HEART-NTA has developed a school leavers' programme in Jamaica, working with senior vocational secondary school students, and is currently trying to implement this programme in general high schools as well. A core element of the approach is sensitization of employers so they understand their role as mentors and push the decent work agenda. They are also encouraged to reduce gender inequality. In order to incentivize this, employers that employ women receive a rebate on their contribution to the national training fund. Additional funding to the programme is provided through an alliance with the National Commercial Bank. The programme is seeking to become greener through encouraging such things as the conversion of bamboo to charcoal. The programme is developing a reputation of being attractive. Thus, learners and graduates recommend it to their friends and siblings.

The Society for the Development of Rural Enterprises is working with rural communities in Nigeria in partnership with government agencies, TVET institutes, international funders and micro-credit providers. The project focuses on the barriers to enterprise development experienced by small-scale farmers. Access to financial services has been used to empower youth and women engaged in organic farming. The project has demonstrated a tangible impact on the lives of participants and their communities. Participants' projects have seen on average a several-fold increase in crop yields and income. Technology parks have been designed to enable value-addition activities at

the local level. This will ultimately lead to the establishment of local export processing zones and accelerated growth of economic activities in the region.

The project has shown that poverty can best be eradicated when the poor are trained and aided to become productive, when their self-esteem have been restored and they can reconnect with their inner selves and activate their creative abilities and capabilities. Moreover, the project is socially, culturally, economically and environmentally sustainable.

TVEC in Sri Lanka has identified the interface between career guidance and the labour market as crucial to improving youth employability. It has developed a website that targets both young people and employers. Young people can book courses and apply for jobs, while employers can register jobs through the same platform. Career books have been produced, which are also distributed to schoolchildren.

The website includes a career interest test. Young people complete this and are then directed towards courses and jobs that appear most suited to their interests. They can read up about appropriate occupations, including information on the typical work environment and salary. They can also get information on where their closest vocational school is, and what occupational areas it covers. Overall, information on 3,168 courses is currently provided. The website is in three languages, Sinhala, Tamil and English.

REFLECTIONS

Youth employment is a major and persistent international challenge. Clearly, as these initiatives show, better knowledge of and familiarity with the realities and possibilities of the labour market can make a significant difference to young people attempting to make successful transitions. Increasingly, there is a realization that such transitions are not just to any kind of job. Rather, at the heart of the school-to-work transition is finding decent work that supports successful personal development into adulthood, provides effective integration into community and society, and furthers SD. Transformative TVET can play a central role here.

Greening TVET

- Ji Sun Chung (Korea Research Institute for Vocational Education and Training – KRIVET, Republic of Korea)
- Javier Bonilla Herrera (Instituto Nacional de Aprendizaje – INA, Costa Rica)
- Daniel Labillois (Cégep de la Gaspésie et des Îles, Canada)
- Pierre-Luc Gagnon (Cégep de la Gaspésie et des Îles, Canada)
- Pradeep Joosery (Mauritius Institute of Training and Development – MITD, Mauritius)
- Chaired by Oliver Diehl (Division of Basic Policy Issues of Initial and Continuing Vocational Training, BMBF, Germany)

The case of the Busan Energy Science High School is an example of transformation of an existing TVET institution to meet the needs of the green economy. In the Republic of Korea, the demand for industrial labour power in the photovoltaic and wind energy sectors has been increasing. Busan Metropolitan City designated the new renewable energy industry as a strategic industry, investing about US\$200 million in HRD in this sector between 2008 and 2013. This resulted in a decision to operate a specialized vocational high school to cultivate a workforce for new renewable energy. An existing institution was repurposed to take on this role.

A range of activities have been developed around this institution. New curricula have been developed in new renewable energy skills, and textbooks developed and revised. Equipment to support practical training has been invested in, and teacher training programmes initiated. An

expanding scholarship programme for students has been introduced. The quality of teaching, learning and guidance has been improved, with a strong emphasis on developing the kinds of attitude that are valued by employers.

More than seventy firms partner with the high school. The direct employment rate of graduates has risen from 20 to 54 per cent and there has been a drop in those progressing on to higher education from 65 to 34 per cent as a result of work opportunities being more attractive and accessible.

INA has developed a waste management initiative for training in the automotive repair sector in Costa Rica. Students need to be aware of a range of SD issues, and pedagogies needs to be targeted to change understandings and alter practices. In 2010 research was carried out into waste management processes in the sector. This highlighted generally poor attitudes and practices. A range of media were used initially in sensitizing actors to the problems faced. Lecturers were put through a training programme and a new course was developed in 2012. Workshops and laboratories were redesigned, with new equipment designed by staff and students. In order for new programmes to have an effect, it is important that there are opportunities for better waste management. To this end, a series of new waste collection centres were opened.

The Community Assistance Module was developed by the Research Initiation and Sustainable Development Support Centre of the Cégep de la Gaspésie et des Îles in Quebec province, Canada. It was designed to support rural development through skills development. The project is driven by a philosophy of community empowerment and mobilization, innovative practices for rural development,



From left to right: Daniel Labillois and Pierre-Luc Gagnon (Cégep de la Gaspésie et des Îles), Ji Sun Chung (KRIVET), Oliver Diehl (BMBF), Javier Bonilla Herrera (INA), Pradeep Joosery (MITD)

and community adaptation to climate change. Student skills are developed and the capacity of community organizations and enterprises built through joint applied research activities. The project is having significant impacts and is very cheap to implement as the main activities are built into the curriculum and activities of the educational provider.

Mauritius is a SIDS. One of the advantages of its size is that it has been able to develop a shared vision among all stakeholders which is then implemented at all levels. An overall vision of 'Maurice île durable' (the sustainable island of Mauritius) has been developed, and championed by the prime minister. MITD has developed a human resources strategy which then implements this vision. Recent initiatives include work on solar heater installation and maintenance, sustainable hotel management, green automotive maintenance, rainwater harvesting, and composting.

REFLECTIONS

These initiatives highlight the very different settings in which TVET can be greened, in technology-intensive industrial sectors, marginalized rural locations in the North, and working with well-established industrial occupations in the South. They point to the possibilities of making both practical interventions at the level of community needs and market opportunities, as well as thinking more systematically about national systems of provision. They involve public institutions working both in formal and non-formal education traditions.

4. Parallel sessions



Six parallel workshops (over two programme sessions) explored issues of youth employability and GTVET in greater detail.

4.1 Entrepreneurial skills – Can entrepreneurial success be taught?

- James Eder (Founder, Beans Group, UK)
- Souheir Sami Mouchawrab (Teacher, VTC of Bir Hassan, Lebanon)
- Mirna Mansour (Student, VTC of Bir Hassan, Lebanon)
- Joshua Bicknell (Co-Founder, Balloon Ventures, UK)
- Co-chaired by Suleiman Suleiman and Katerina Ananiadou (UNESCO Beirut and UNESCO-UNEVOC)

A focus on youth employability without attention to promoting youth entrepreneurship makes no sense. It becomes vital, therefore, to consider what can be done at the policy level to facilitate young entrepreneurs. At a more practical level, it is also crucial for TVET systems to be able to identify and deliver the skills that are required to start and maintain a successful business. However, TVET alone is not enough. Entrepreneurship is always challenging, and risks and interventions need to be informed by a careful analysis of prevailing and potential market conditions in order that the constraints and possibilities for entrepreneurship in different markets are well understood. It is important also to remember that the culture and value system of entrepreneurship is very different from those that pertain in many formal public education providers and systems. Thus, a real question must be asked regarding the extent to which entrepreneurial success and spirit can be 'trained' for in formal education systems.



From left to right: Mirna Mansour and Souheir Sami Mouchawrab (Student and Teacher, VTC of Bir Hassan), Suleiman Suleiman (UNESCO Beirut), James Eder (Beans Group), Joshua Bicknell (Balloon Ventures)

Given that entrepreneurship is about identifying potential demand-side opportunities, it is particularly fitting that such a session should not simply be about educators telling stories of how they have sought to become more entrepreneurial or how they have prepared their students for lives of risk-taking. Rather, it is important to hear the voices of young entrepreneurs (such as Mr Eder and Mr Bicknell).

The Know about Business Programme (KAB) has been implemented and accredited by the ILO in more than 50 countries. The programme promotes entrepreneurship education, including the development of social and sustainable enterprises, and targets teachers and students in public and private secondary education, vocational and technical training institutions, and higher education. More than 14,000 teachers have been trained in entrepreneurship education and more than one million young people have participated in a KAB course. Bir Hassan VTC, Lebanon, is one institutional partner in this programme. For college staff, the programme was attractive for the way that it sought to develop entrepreneurial skills and attitudes that were also conducive to community and societal development through the use of interactive teaching and learning methodologies. For learners, the programme transformed lives and built entrepreneurial skills, self-confidence and the ability to work with others.

Balloon Ventures has brought British students and Kenyan would-be entrepreneurs together to develop entrepreneurial skills, leading to further investments by local Kenyan capitalists. It has now spread to Chile and is about to launch in Uganda and Sri Lanka. Such a programme builds the entrepreneurial skills and knowledge about business processes of both cadres of participants. However, it is important to remember that such programmes can only achieve so much. Key challenges to enterprise success in countries such as Kenya include the lack of access for efficient finance to support new entrepreneurs. These must be addressed to maximize the impact of initiatives such as Balloon Ventures.

The example of Balloon Ventures points to the possibility of getting beyond some unhelpful binary thinking about development practice: that is, making a clear distinction between volunteering and entrepreneurship. For both

of the young entrepreneurs speaking in the session, there was a sense of social enterprise that could make a bridge between volunteering and entrepreneurship, both of which are key concepts in empowering young people. Equally, the discussion focused on bridging the parallel gap between teamworking and entrepreneurship, as the former is in fact highly supportive of the latter.

REFLECTIONS

Overall, the session highlighted the importance of seeing entrepreneurship development as part of the set of interventions that can support the employment of young people. Such interventions may not be suitable for all young people, but the cases presented point to the potential of such programmes both to build entrepreneurial attitudes prior to entering the world of work and to assist existing young entrepreneurs in the challenging business of making their enterprises financially sustainable.

4.2 School-to-work transitions: perspectives from the informal and formal sector

- Diego Rei (Senior Technical Advisor on Youth Employment, ILO Regional Office for Africa –ROAF, Addis Ababa)
- Christian Brzinsky-Fay (Senior Researcher, Berlin Social Science Centre, Germany)
- John Simiyu (Professor of Technology Education, University of Eldoret, Kenya)
- Marie-Josée Fortin (Director of International Partnerships at Colleges and Institutes Canada)
- Chaired by Birgit Thomann (Head, Department of Internationalization of VET and Knowledge Management, BIBB, Germany)

School-to-work transitions are clearly central to the problematic issue of youth employability. These transitions look very different across national settings due to great variations in how different countries organize their upper

secondary/post-school education and training system and their youth labour market. The latter is also hugely shaped by the overall size and shape of formal and informal labour markets and job opportunities.

Thus, it becomes important to ask how transitions from education to decent work can be facilitated and coordinated more effectively. This includes a focus on which institutional set-ups have proven to be successful and in what contexts. Issues of school-to-work transition in the developing world cannot be addressed without a consideration of the nature of informality.

Research evidence shows that patterns of youth transition to the labour market in OECD countries are strongly influenced by different educational structures across member states. Institutional determinants have a significant impact on unemployment rates. The data demonstrate how countries with dual training systems have lower youth unemployment and NEET (not in employment, education or training)

rates than those with school-based training systems. Part of the superiority of dual systems is that they are less vulnerable to economic shocks.

However, it is not a simple matter of transferring or adopting a dual-system model. A dual system needs private-sector participation, including significant investments from employers. It also necessitates a long-term perspective regarding vocational training systems that stresses collaboration and trust between private and other sectoral stakeholders. Of course, the private sector needs to see returns from the investments. This implies that the dual system needs to focus on industry-specific qualifications and must provide theoretical and practical vocational qualifications. On the other hand, the dual system is problematic in that permeability between the dual system and tertiary education is not high. There are also concerns that the dual system is not sufficiently responsive to economic and social change.



Panelists from left to right: Marie-Josée Fortin (Colleges and Institutes Canada), Diego Rei (ILO Regional Office for Africa), Birgit Thomann (BIBB, Germany), Christian Brzinsky-Fay (Berlin Social Science Centre, Germany) and John Simiyu (University of Eldoret, Kenya)

The ILO has a longstanding concern with skills and the informal sector. It understands the informal sector as unincorporated private enterprises, which are not registered as organizations and do not have employees registered. However, it is important that informality be seen as including those whose jobs are outside the framework of regulations, even if they are employed by a firm that is classified as formal. The way informal employment manifests itself depends on the country.

There is a growing sense that informal employment should not be formalized only so that the government can control and regulate the workers. Instead, the informal sector should be formalized in order to protect workers from working conditions that are outside legal and regulative frameworks and do not meet their standards, and to avoid unfair competition.

ILO member states are now encouraged to seek to facilitate the transition by supporting formalization and providing protection to workers in the informal sector. In Africa, the informal sector is a lot larger than in other parts of the world. However, in other regions there is a lot of youth informal employment in the formal sector. Overall, there are few major gender discrepancies at the aggregate level. However, the biggest differences are in sub-Saharan Africa. There, proportionally more females are employed in the informal sector than males. There is a strong relationship between education and employment: tertiary education leads to a higher chance of formal employment. However, vocational education does not guarantee formal employment.

The main policy implications are as follows:

- In developing countries, the vast majority of youth employment is in the informal sector, so the quantity and quality of education matters to those seeking work there;
- There is a continued need for work on formalization of the informal sector, including the general rule of law, better governance, and so on;
- There is a need to support the informal sector through approaches such as recognizing prior learning and developing qualifications.

REFLECTIONS

It is vital to build any interventions in the youth labour market on detailed analysis of the dynamics of that market in specific national settings. Even in close neighbouring countries in the OECD, with strong cultural affinities, the precise nature of the education, training and employment interface for youth varies in significant ways. Equally, there is a need to take the nature of informal work as a serious factor in thinking about interventions in the youth labour markets of developing countries. Models such as the dual system may seem more desirable than others; but there are important questions to be explored regarding the possibilities for adoption of improved systemic responses and the foundations that are required before these can flourish. Naïve policy commitments to import the dual system or to formalize the informal economy are likely to lead to many unintended consequences.

4.3 Private-sector cooperation in TVET – what works?

- Atul Bhatnagar (CEO, National Skills Development Corporation, India)
- Yorck Sievers (Director, AHK Vocational Education and Training, DIHK, Germany)
- Juliet Chukkas-Onaeko (Director-General/Chief Executive, Industrial Training Fund, Nigeria)
- Mr. Leif Edvinsson (Ambassador representing Sweden to Leonardo European Corporate Learning Award)
- Chaired by Borhene Chakroun (Chief, YLS Section, UNESCO Paris)

It is clear that the involvement of the private sector is a necessary aspect of successful TVET systems. However, it is less clear what the nature and extent of its role should be. Private-sector involvement can range from the design of curricula and training programmes to the provision of work-based apprenticeships and resources. Given this range of possible



From left to right: Yorck Sievers (DIHK), Borhene Chakroun (UNESCO), Atul Bhatnagar (NSDC), Juliet Chukkas-Onaeko (ITF), Leif Edvinsson (Swedish Governmental Foundation for Competence and Knowledge)

involvements, it is important to explore which models of stakeholder cooperation have proven to be successful in which settings, and which political and legal framework conditions are required.

India is a country of young people. It is estimated that in 2022 15–17 per cent of the global working population will be of Indian origin. The increasing number of people seeking employment calls for a skilled and well-trained workforce. However, so far India is suffering from low productivity, which is owing in part to a low level of skill training. Only 10 per cent of the workforce have received any training in work skills. If India is to have a competitive economy, the quantity and quality of skill training has to be increased. Therefore, governmental bodies, in collaboration with the private sector, have developed a roadmap to create an institutionalized framework and to develop technological infrastructure.

To transform TVET and foster skills training, a range of activities have been initiated by the Government of India. These include:

- skill gap studies
- the development of standards and certification
- the involvement of industry

- supporting new technologies.

The Government of India has committed to the upskilling of 500 million Indians. Through the National Skill Development Corporation (NSDC) alone, €240 million has been earmarked for skills training. A National Vocational Education Qualifications Framework is being established. Twenty-nine sector skills councils have been established and twelve more are in development. These are intended to be of the industry, by the industry and for the industry in order to make the TVET sector more effective and to overcome the skills gap. With the participation of the private sector, the 'Indian Cloud' has been developed. This is a virtual platform with all-embracing information on TVET issues, supported by a call centre.

In Germany, the private sector has long been a central actor in national skills system. In this system, training takes place in companies as part of employment. The focus is not primarily educative; rather the training is focused on productivity and employability.

Companies are directly involved in the training. They have a direct influence on the content of the training, which provides skills and knowledge needed in the labour market and needed in the company in which training is provided. Dual TVET system training takes

place in the company three to four days a week, complemented by attendance at a TVET school for one to two days per week. There is no training without a training contract in a company. Around 340 occupations are regulated in this way, and €240 billion per year is expended by companies for training. This is far in excess of the contribution of the public sector. Companies have the understanding that training is not a cost, but rather an investment in human resources in order to get qualified skilled workers. Thus, it is seen as a win-win situation for companies and apprentices.

Chambers of commerce (Industrie- und Handelskammern, IHKs) are a key mesostructure in the German skills system. There is a network of around eighty chambers covering the whole country. Chambers are legally responsible as 'competent bodies' in law. Their responsibilities include registration, examination and certification at the national level for their particular sector. They are also responsible for quality assurance throughout the whole training process. They represent and organize the companies' needs, interests and inputs – in cooperation with business associations.

The chambers are organized into an umbrella organization, the DIHK. The overall DIHK association covers 3.6 million member companies of the IHKs. It also coordinates the Worldwide Network of German Chambers of Commerce in eighty-six countries.

Overall, there are perhaps five key elements that characterize German VET:

- cooperation of government and industry, or a public–private partnership
- learning within the work process
- acceptance of national quality standards
- qualified VET staff
- institutionalized research and consultancy.

The Nigerian TVET system includes different stakeholders such as federal and state government departments, regulatory agencies, professional bodies and trade associations, training service providers and employers of labour, as well as donors and development partners, and parents and guardians.

The Industrial Training Fund (ITF) was founded in 1971 by legislation and is mandated to develop practical skills in Nigeria. The ITF has the following responsibilities:

- promoting the acquisition of skills in industry and commerce with a view to generating a pool of indigenous trained labour power sufficient to meet the needs of the private and public sectors of the economy
- providing training in management, technical and entrepreneurial development skills for the public and private sectors of the Nigerian economy
- setting training standards in all aspects of the economy and monitoring adherence to them
- evaluating and certifying vocational skills acquired by apprentices, craftspeople and technicians in collaboration with relevant organizations
- managing and administering, on behalf of the government, the Students' Industrial Work Experience Scheme (SIWES).
- Nigeria has a workforce of about 69 million people. Therefore, it is a huge task to provide and update skills training, and skills development is a key part of the Nigerian Industrial Revolution Plan. The ITF supports this plan by focusing on matching unemployed young people to real jobs on the labour market. The ITF involves the private sector in identifying needs and gaps in TVET and labour market oriented skills development.

The private sector faces challenges with regard to the TVET sector:

- the absence of a fully developed vocational training standard and certification process
- the high cost of TVET facilities and equipment
- an urgent need for the upgrading of existing TVET centres and the establishment of new ones
- widespread negative perception of TVET as education for the disadvantaged



From left to right: Robert Mahlman (CETE, The Ohio State University, USA), Cristina Martinez (OECD), Jakob Rainer (UNU-EHS), Shyamal Majumdar (UNESCO-UNEVOC) and Liu Yufeng (Central Institute for VTE, P. R. of China)

- low labour mobility because of the lack of a fully developed framework for vocational training and career advancement
- poor incentives for private-sector involvement in TVET.

However, there are already some success stories. Several companies have provided training for thousands of young people.

REFLECTIONS

It is clear that national skills systems must have strong employer involvement. However, successful systems, like that of Germany, have undergone a long process of evolution alongside the broader maturation of the national economy and political and social structures. Therefore, it is challenging for countries that are seeking to transform skills systems rapidly. Both India and Nigeria are large countries with very considerable pockets of wealth and innovation. While this leads to great complexity, it also points to a potential to develop national systems that may not be so easily present in smaller states. Thus, questions still remain about how to build new skills systems both in large and unequally developed countries such as these, and in smaller, less capacitated states. Learning from successful cases such as Germany, then, requires a very careful reading of what elements of the German system might be grafted on to existing systems elsewhere, and what bits are unlikely to be implementable because of issues of culture or capacity.

4.4 Greening TVET: policies and approaches for meeting skills for sustainability

- Shyamal Majumdar (Head, UNESCO-UNEVOC)
- Cristina Martinez (Advisor, Knowledge Sharing Alliance, OECD)
- Liu Yufeng (Director and Research Professor, Central Institute for Vocational and Technical Education, P. R. of China)
- Robert Mahlman (Director, CETE, The Ohio State University, USA)
- Chaired by Jakob Rainer (Vice Rector, UN University Institute for Environment and Human Security – UNU-EHS)

Policies and approaches are being developed that seek to orient TVET systems and enable them to empower youth and adults to become constructive agents of SD, meet the demands of new consumption patterns and production processes, and advocate sustainability at work, in communities and societies. It is important to reflect critically on current initiatives in order to chart more effective ways forward for transformative TVET.

Five trends in greening TVET can be identified.

First, there is a broader understanding of education for SD (ESD) and a progressive trend across countries to make education more relevant to addressing social, environmental and economic challenges. People are aware that climate change is an issue all over the world. However, this is not enough. Research clearly indicates that demand for green skills outstrips supply. It is also important to stress that it is

not enough to focus only on occupations in the renewable energy sector. Rather, there must be a focus on existing occupations. Some face minimal changes, and some more fundamental reorganization. Some occupations will totally disappear. The educational response is typically too slow. While the campaigning activities of the Decade for Education and Sustainable Development achieved much media attention, schools remained as slow as ever to incorporate scientific, social and environmental problems into mainstream curriculum and pedagogy. It is evident that new curricula, teacher training and so on are vital.

Second, multi-stakeholder partnership and networks within and across borders have been effective in advancing ESD in policy and implementation. However, weak alignment with environmental and skills policies is hampering the advancement of these partnerships in practice.

Third, while there has been substantial progress with meeting the objectives and targets of ESD and EFA, there are inadequate mechanisms for aligning the two processes. This was exacerbated by the nature of the MDGs, which led to their being seen as applying only to the poorest countries. Part of the intention of the SDGs is that they seek to address pressing issues for all nations.

Fourth, advances have been evident not only in formal education but also in non-formal and informal education. There have been significant investments in ESD in communities, schools and businesses, complementing efforts at the national level.

Fifth, whole-institutional approaches to ESD are increasingly seen to advance the sustainability agenda. A whole-institutional approach is based on five pillars of transformation:

- Green Campus: managing the campus (resource management, technology deployment, monitoring and so on) so as to reduce the carbon footprint of the institution;
- Green Curriculum: promoting SD (cleaner technology, defining green learning outcomes, integrating ESD across the curriculum, teacher professional development). There are many challenges here, such as which model should be used?

And should greening be in all subjects or only in new curricula?

- Green Community: adapting the wider community (capacity-building, renewable technology adoption, resource support, unique practices). The institution has a role to interface with the community to interchange greening measurements;
- Green Research: fostering research (on for instance renewable energy, water treatment, green innovations, waste recycling). Here the key issue is ascertaining the impact of interventions. Action research is likely to be important here;
- Green Culture: promoting culture (green values, green attitudes, green ethics, green practices). Greening issues have to become part of the system.

A good example is Jamaica, which implements the whole-institutional approach to greening TVET. There has been impressive work in creating a sustainable green campus through a solution-based TVET agenda in the University of Technology. Further examples of countries that are implementing the five dimensions include the Philippines and Viet Nam.

Challenges remain in connecting the dots. There is some tendency to adopt part of the approach or for institutional and national levels not to fit well together. It is important too that there are parallel national and global processes. At the national level, it is essential that there are coherent and coordinated policies for green growth, and the location of TVET within these. At the global level, more work is required on sharing evidence-based policy and practices, facilitating multidirectional dialogue, and forging new partnerships towards supporting capacity-building in research. In addition, there is a challenge to industry to integrate SD dimensions into all occupations and to reflect this in their training activities.

Greening TVET is a vital journey that we must undertake. It extends existing ESD practices in TVET. It acknowledges that TVET is crucial for making a transition from energy- and emission-intensive economies to cleaner and greener production and service patterns. It is crucial to realize that greening TVET is about supplying skills not only for emerging occupations but also for existing occupations.



Panelists of the session

Greening TVET is part of a transformative and inclusive vision for TVET as outlined at Shanghai. It represents a more systemic approach to all TVET activities than a mere economic approach. It aligns with local economies, covering both formal and informal enterprises and work. It guides stakeholders in the framing of skills development according to available occupational requirements, addressing questions of what skills and workforce education programmes are needed; what proficiency levels should be set for what jobs and work processes; and what qualifications should be the focus of investments. Thus, it symbolizes a continuous process towards attaining low-carbon green growth.

Another challenge is developing foresight regarding green and inclusive jobs and skills. There are clearly a series of megatrends that need to be addressed. A key issue is demographic change, including problems of youth unemployment and complex patterns of urbanization.

It is evident that greater policy coherence is needed between environmental and employment targets. On the whole, there now seems to be agreement that a low-carbon economy will have, in aggregate, a neutral or slightly positive overall impact on the labour force in terms of total employment,

but impacts will be spread unevenly across countries, regions and types of worker. The net positive employment forecast of climate change regulation is derived from the expansion of economic sectors involved in the production of environmental goods and services. The economic opportunity of these green industries was estimated to be worth US\$548 billion in 2004 and projected to grow to US\$800 billion by 2015. The UN Environment Programme (UNEP) estimates that 20.4 million jobs will be created in renewable energy industries (wind, solar, biofuels). A recent UNEP report produced an analysis of the economic and emissions impacts of the transition to a lower-carbon economy. The modelling included two 'green' scenarios with different levels of increased investment over the period 2010–2050, contrasted with two business-as-usual investment patterns. The two green scenarios build on an extension of the work done by UNEP's Global Green New Deal Policy Brief, which called for at least 1 per cent of GDP to be directed towards green investments. This generated the first green scenario. The second scenario assumes that 2 per cent of GDP is directed to green investments, with priorities at the sectoral level emphasising energy and climate change activities that limit emissions to the target range of 450 ppm.

In both of the scenarios there is a positive effect on GDP in the longer term as a result of the transition to a lower-carbon economy. This effect is magnified in scenario 2, with higher levels of green investment. The employment impacts are neutral in these scenarios, but these are net results, and therefore account for job losses as well as gains. The environmental impacts are significant, with large reductions in the ecological footprints of economies.

The 'employment and energy' scenario is based on an assumption of measures likely to have significant employment effects integrated with those to reduce energy consumption and emissions. Employment measures include incentives for employers to hire additional workers (such as lower labour taxes), work incentives for individuals (such as lower unemployment benefits) and greater investment in research and development and skills.

It is important to note that green jobs are not necessarily inclusive jobs. It is important to keep this in mind when developing new

policies. For instance, we need to remember that construction, an area of major current green potential, is a very male-dominated sector.

As with all labour market changes, the effects of greening on different sectors and different segments of the labour force are likely to be different. The crisis has also shown that some groups are particularly at risk, and that labour market exclusion of disadvantaged groups remains a continuing problem, which will be unresolved unless there are proper active policies.

The development of the green economy will affect the employment structure of OECD member countries by creating new jobs, 'greening' existing jobs (including both those with greener skills sets and those requiring significant restructuring), and destroying some others which will become obsolete. Some sectors or regions will suffer and jobs will be lost, while other activities will expand and generate new employment. In general, very little information is available on the potential effect of the greening of the economy on social and territorial cohesion. It is generally recognized that the transition to a competitive eco-efficient economy is likely to have a stronger impact on lower-skilled workers, whose skills might no longer be marketable (through job destruction or substitution), than higher-skilled workers (who are more likely to benefit from job creation, or through implementation of new technologies calling for additional skills).

Thus it is important that policies for promoting green jobs and green sectors do not reinforce or exacerbate existing inequalities. The segregation of women and men into different sectors of the labour market means that effects will be experienced differently between mixed-gender activities and those dominated by one sex, for example the male-dominated fields of energy, agriculture, fishing and other fields related to science, technology, engineering and mathematics (STEM).

REFLECTIONS

It is apparent that the green campus idea is one that excites many stakeholders. However, it remains daunting for many because of its comprehensiveness. It may be that the way forward is to find elements of the approach that bring

'quick wins' but which also build towards the overall objective. Getting learners involved as actors in the process seems particularly crucial. Given what we know of the environmental attitudes of young people, as opposed to their elders, it is likely that such an approach would also have strong pragmatic value.

A particular challenge for educational interventions around greening of skills, like other issues such as overcoming gender stereotyping and promoting disability inclusion, is that providers may potentially move far beyond employers, leading to challenges when learners find that they have been poorly prepared for workplaces as they exist now. Thus, there is a pressing need to engage with employers and seek to get them to engage with the kind of transformations TVET is seeking to promote.

4.5 Green TVET teaching, learning and training

- Erik Swars (Senior International Manager, Swiss Federal Institute for Vocational Education and Training – SFIVET, Switzerland)
- Georg Spöttl (Department Head, Institute of Technology and Education (ITB) Bremen, Germany)
- Dagmar Winzier (Programme Expert, UNESCO-UNEVOC)
- Chaired by Rupert Maclean (UNESCO Chair Professor of TVET and Lifelong Learning, Hong Kong Institute of Education)

The United Nations Decade of Education for Sustainable Development (DESD) (2005–2014) sought to integrate the principles, values and



From left to right: Dagmar Winzier (UNESCO-UNEVOC), Georg Spöttl (ITB), Rupert Maclean (UNESCO Chair Professor of TVET and Lifelong Learning, HKIEd), Erik Swars (SFIVET)

practices of SD into all aspects of education and learning in order to address the social, economic, cultural and environmental challenges of the twenty-first century.

GTNET can play an important role in the transition to green growth and green societies to create a sustainable future. A green economy requires a workforce with the appropriate skills and training. But at present, skills development is lagging behind the needs of the labour market, which offers an increasing number of jobs in such emerging sectors as renewable energy and energy efficiency. GTNET contributes to closing this skills gap with respect to decent work and social welfare.

To reach the goals of SD and to implement GTNET it is also necessary to rethink and reorient methodologies for teaching, learning and training, raise the awareness of sustainability and then consequently change behaviour and attitudes.

As part of the wider Swiss government Cleantech Initiative, SFIVET was charged with a

review of all vocational education and training courses in terms of their conveying information on resource efficiency and renewable energies and providing support to TVET partners.

Green skills in TVET programmes include both occupation-specific skills and general green skills. For many occupations green skills are already included in the training plans for TVET programmes in Switzerland. In particular, the themes 'waste separation and recycling' and 'general environmental themes' are included in over 70 per cent of training plans. The greatest potential for new developments across programmes lies in the area of waste valorization, which could be relevant to around 60 per cent of occupations surveyed. In the Swiss dual system, the introduction of new green skills training modules is a key tool for greening the economy.

The global commitment to ESD has not yet been structurally implemented in TVET: there has been no shift of paradigm. Therefore, there is a need to ask how students should be enabled to

orient their work and lives in a sustainable way, in terms of ecological compatibility, economic performance and social responsibility.

The University of Bremen and BIBB have collaborated in trying to develop new curricula to address these issues. The key concept is that work processes have to be shaped in a sustainable way. The new curricula will now feed into teacher training.

From a UNESCO-UNEVOC perspective, this definition of greening TVET was suggested:

a continuous process towards a sustainable future. It responds to the technical, economical, societal and environmental changes induced by the challenges of the 21st century such as climate change, degradation of ecosystems and social inequities.

It is necessary to consider further how the concept of greening TVET is influencing learning and training, and what will be the consequences of this. Some jobs are likely to be little changed, others changed significantly, and others still are novel. It is important to examine the likely training needs in these different categories.

It is also important to understand that the effects of moving towards a GTVET approach require responses at three levels. At the institutional level, it will be necessary to:

- transform institution/occupational practice/ educational frameworks
- strengthen local initiatives
- develop capacity.

At the national level, what is required are:

- coherent and coordinated policies for green growth
- a national sustainable development strategy
- strengthening partnerships between stakeholders.

At the global level, there is a need to:

- share evidence-based policies and practices
- facilitate interagency cooperation
- support capacity-building and research.

REFLECTIONS

While new curricula and pedagogies do need to be developed to green TVET, it is important to note that the consequences of greening of skills and work will be economic, environmental and social, and that these are likely to give rise to contradiction and conflicts of interest.

4.6 Skills for inclusive societies

- Madhu Singh (Senior Programme Specialist, UNESCO Institute for Learning, Germany)
- Hervé Huout-Marchand (TVET Expert, UNESCO Dakar)
- Jose Fernando Araya (Director of External Cooperation, INA, Costa Rica)
- Margarita Pavlova (Director UNEVOC Centre & Co-Director, Centre for Lifelong Learning, Research and Development, HKIEd)
- Steve Cumming (Program Manager, Youth Learning, The Mastercard Foundation)
- Chaired by Harry Stolte (Team leader for Human Capacity Development in TVET, Magdeburg University UNEVOC Centre/GIZ)

Climate change is a significant driver of demand for labour and skills supply, across all sectors and in all countries. Optimal use of the transition to a greener economy can only be made by developing the knowledge, skills and competences required by resource-efficient processes and technologies.

These processes and technologies are often linked to the industrial economy, with less regard to the fact that non-industrial and informal sectors also have considerable potential to accelerate the transition to a greener economy. They can also address environmental issues and youth and adult unemployment, including being trapped in 'dead-end' careers. Thus, the challenge lies in greening all work so as to generate inclusive growth. Programmes focused on adults, rural people and the informally employed need to

be seen as important elements of an overall transformative agenda for TVET.

The recognition of non-formal and informal learning is an important mechanism for developing green skills. Thus, green skills development can usefully be located within the framework of lifelong learning and social inclusion.

A joint initiative of UNESCO-UIL and the Centre for Lifelong Learning Research and Development of the Hong Kong Institute of Education focuses on 'Inclusion of green competencies in the recognition of prior learning'. A key recommendation is to integrate a green core skills framework into recognition of prior learning processes. Current institutionalized practices do not recognize the resources, identities and experiences individuals develop in other settings. Such resources are not properly recognized or used as building blocks for developing skills. Moreover, there are too few existing opportunities for skills formation, particularly in rural areas. Even where opportunities do exist, the quality of formal and non-formal education is often inadequate.

Green skills development requires the development of new skills and the upskilling of existing skills: for example, a new occupation is that of eco-designer in the renewable energy sector. The green core skills framework should consider generic skills, key competencies, inter- and intra-personal skills, upskilling of existing

skills, and specific skills related to new green occupations.

Greening TVET is also contributing to the processes of developing skills for inclusive societies in sub-Saharan Africa. ESD and GTVET complement each other. Crucially, the greening of TVET is also a response to transformed labour market needs around emerging jobs. Indeed, the 'green economy trend' stimulates economic growth. However, despite stable economic growth across the region, this has not been translated into social development or inclusion yet. Instead, there is jobless growth.

The evaluation of the existing education goals in the region points to massive schooling challenges that then impinge upon TVET possibilities. Millions of children remain out of school and the quality of education is low in many countries. Strikingly, 60 per cent of sub-Saharan countries will only reach one EFA goal, and only the Seychelles will achieve all six goals. Girls in rural areas are most affected by the non-achievement of the goals, and remain neglected by the efforts to achieve the goals. The post-2015 goals must include specific targets to finance education. The promotion of basic and generic skills, such as literacy, numeracy and entrepreneurship skills, is also essential in order to improve the effectiveness of TVET programmes.

At the national level across the region, policies on GTVET are increasing. However,



From left to right: Jose Fernando Araya (INA), Hervé Huout-Marchand (UNESCO Dakar), Harry Stolte (Magdeburg University UNEVOC Centre/GIZ), Madhu Singh (UIL), Margarita Pavlova (HKIEd), Steve Cumming (The Mastercard Foundation)

implementation lags behind policy drafting. There have been a number of initiatives by UNESCO-UNEVOC, UNESCO BRENDA and other parts of the UNESCO family to try to address GTVET issues in West Africa.

Latin America faces major environmental challenges. Urbanization stands at 80 per cent, driven by rural poverty. This development presents profound challenges in terms of 'greening' societies. However, the importance of this is that these huge environmental challenges lead to massive skills opportunities. In response, SD has been integrated into some national policies. However, implementation lags behind. New training programmes are needed for organic producers, foresters, water treatment workers, watershed managers, wind systems installers and other types of new job.

REFLECTIONS

The transformative agenda calls for a vision of TVET that is inclusive, lifelong and sustainable, and which promotes human as well as economic development. Projects can produce islands of alternative practice, but the real challenges come in affecting a wider transformation of approaches to growth. A commodity-driven growth model, as practised currently by many African countries, does not offer opportunities for young people, who need inclusive growth. Thus, TVET transformation must be allied with wider movements for SD.



From left to right: Simon McGrath (Nottingham University), Borhène Chakroun (UNESCO), Cristina Martinez (OECD), Simon Bartley (WorldSkills International), Olga Oleynikova (IVETA), , Peter Greenwood (ETF)

5. Fresh TVET outlooks



- Simon Bartley (President, WorldSkills International)
- Olga Oleynikova (President, International Vocational Education and Training Associations –IVETA)
- Cristina Martinez (Advisor, Knowledge Sharing Alliance, OECD)
- Peter Greenwood (Head of Evidence-based Policy Making Department, ETF)
- Borhène Chakroun (Chief of Section, Youth, Literacy and Skills Development, UNESCO Paris).
- Chaired by Simon McGrath (Professor, International Education and Development, Centre for Research in Higher, Adult and Vocational Education, University of Nottingham, United Kingdom)

The emerging development and education agenda, including UNESCO's position on education post-2015, defines a target and a set of guiding principles for TVET. At the same time, the Shanghai Consensus gives further insights into a vision for transformative TVET that is supportive of this wider SD agenda and which holds true to UNESCO's commitment to skills for work and life. In delivering on this transformative agenda, it is important to consider the potential range of new ideas, new actors and new ways of working that might characterize TVET post-2015.

World Skills' philosophy is one of using competitions to develop attention to TVET, build learner confidence and motivation, and raise





Youth representatives Purity Wamuyu Gitonga (MasterCard's Foundation's Youth Think Tank, Kenya) and Wouter de Regt (UNESCO-UNEVOC) participate on the discussion

the quality and image of TVET. World Skills has sought to address the importance of student voices by including all finalists in its global governance structures. Skills requirements are very different across the countries of the world. That is why we need to share our skills and we need to know where which skills are needed in the world. It is important to consider bottom-up questions such as, why do we use these materials and not others? Compulsory education should teach children about life; the rest is up to apprenticeship and further studies. Specialization will come more and more. Skills will be driven by the education system but also by employers.

IVETA plays an important sectoral role as a vector of international collaboration in TVET. It has noted the importance of making TVET more attractive. It is wrong to assume that TVET is not attractive to young people. For example,

in Finland 50 per cent of young people choose TVET. IVETA is working on the importance of upskilling TVET teachers, especially in ICT skills. It is also addressing how TVET can deliver global citizenship skills. One new challenge for TVET is to build resilient skills: skills that ensure young people can survive in the world.

OECD has been very active in recent years in research on youth employment. Many young people are suffering from the current crisis, particularly in countries such as Spain and South Africa, which have among the highest unemployment rates. The OECD is concerned to understand better the link between jobs that provide a good income and autonomy, and the link from skills to the talents of the young people. We need to recognize that informal employment is much more frequently experienced by young people. With other agencies, the OECD has been supporting the

youth work of the G20 through the publication 'Promoting better labour market outcomes for youth' (OECD and ILO, 2014). We have to look to long-term measures and especially quality aspects. Here, the link from TVET to higher education is significant. There is a need also to provide students with an awareness that they are part of the innovation process. It is important that we think increasingly intergenerationally about work. We need to engage with both older and young workers. Awareness about these issues at the national level is fundamental.

ETF has been active for twenty years. In this time, it has stressed the importance of creating a long-term vision for the development of countries. This requires systematically including the voice of youth in the policy discussion. Skills used in the world of work are also useful in the daily life, so it makes absolute sense to talk of skills for work and life as one integrated notion. This makes TVET an integral part of the post-2015 agenda. Moreover, it is not possible to hold the discussion in a national environment because we no longer truly have national labour markets. In this light, there needs to be a holistic policy approach that addresses how quality is integrated and which develops good international indicators of what we mean by quality. We also need to think how government structures allow for efficient TVET systems, how the role of teachers is placed centre stage, and how learning to learn is enhanced. There need to be better mechanisms for supporting the permanent upgrading of skills. Career guidance is a critical part for all transitions. There must be greater attention to public management. We must reflect on how countries can be helped through evidence to a more outcome-oriented process, including evaluation and monitoring. Above all, we must address the urgent challenge of breaking the cycle of no jobs – no experience – no jobs.

For UNESCO, equality is the major challenge for skills development. Production processes are changing globally, and who gets access to the required skills is a crucial social, political and economic issue. TVET has to deal with four Vs: volume (people live longer, and there are more people), variety (technical, online, blended learning and so on), velocity (the speed of technological environmental, political change) and validity (the widespread doubt about TVET because stakeholders know very little about it).

UNESCO's current TVET work has three pillars:

- the Shanghai Consensus
- the ongoing work on the Revised TVET Recommendation
- the post-2015 agenda.

REFLECTIONS

Regarding the post-2015 agenda, it is important to support skills development but to realize that skills and work do not necessarily promote human flourishing, reduce inequality or increase access to rights such as that to access clean and safe water. The TVET agenda must always keep an eye on such wider issues. It must also respect and reflect the views of multiple stakeholders, including employers, learners and communities.

The transformative vision for TVET set out in Shanghai is achievable, and can draw strength from the post-2015 agenda and global commitment to SD. The UNEVOC Network has begun to push towards a new vision for skills for work and life post-2015, and it has allies in the organizations represented on this panel. A start has been made but much work still remains to be done.

6. Key Messages and summary of the forum



The SDGs represent an important step forward in development thinking by bringing together SD with poverty alleviation, inequality and technological change in a holistic account of how people's lives can be enhanced. This re-emphasizes the role of TVET as the master key to sustainable development. Following on from Shanghai and the post-2015 agenda, transformative TVET is the foundation on which decent and sustainable work and life for all can be built.

While UNESCO will continue to insist on the lifelong learning needs of all, the Global Forum paid particular attention to the more immediate needs of young people as they seek to make successful transitions to adulthood and decent work. These young people often face very uncertain futures, with more than 70 million of them already unemployed, and many millions more stuck in work that is precarious or which does not fulfil them either as workers or human beings. Yet these young people are also an incredible resource. If a transformation of TVET and a realization of SD are to be achieved, then it is these young people who will be at the heart of making them come to pass.

The heightened global emphasis on environmental sustainability brings major opportunities for TVET. Huge environmental challenges abound, which threaten the present generation's legacy to future generations. Yet the scale of the challenge also means massive skills opportunities. Where countries can move towards more inclusive growth paths and green-oriented transitions, then evidence shows that jobs will be created. Indeed, many million new green jobs have come into existence during this decade. Many are in high-technology areas but others are adapting lower-level skills and technologies to green consumption and production patterns. It is also true that negative climate change will cost jobs and livelihoods, and without adequate action on climate control, the skills, jobs and lives of the next generation will be stunted. Skills are vital for capturing the benefits of these massive changes and for mitigating the negative consequences.

In the face of the SD challenge, there is a need to urgently turn ideas into actions. This cannot be done in a top-down way in a number of sectoral silos, but requires intersectoral, multi-level and multi-actor approaches. There is a growing acceptance that a range of actors have vital contributions to make to TVET action. Beyond states and their institutions, employers and their associations, private providers, learners, parents, teachers and others have a role to play.

Transformative TVET is re-envisioning TVET and its goals. Lifelong learning, inclusiveness, global citizenship and sustainability are the underpinning goals of a modern TVET. TVET must be linked not only with the world of work, but also with creating pathways across education streams, and facilitating transitions to work and to life. TVET needs to offer corridors that expand the provision for traditional skills to meet occupational needs and to contribute to the creation of solid knowledge-based societies that give vulnerable groups an equal stake.

Approaches to youth unemployment and greening should go hand in hand. The insistence on sustainability brings new concepts into the work of TVET, as it is charged to promote transversal skills to the same great extent as it is training people in occupation-oriented skills, and to plan intergenerationally. A challenge lies in building new partnerships and ways of working that respect the diversity of those involved, and the important skills and perspectives they bring to the work of TVET and its interaction with other sectors.

Mechanisms for identifying the skills needs of the future need to be invested in. This will necessitate renewed efforts to build labour market intelligence systems that are able to identify and communicate existing skills opportunities and needs through robust partnerships between employers, analysts and training providers. It will require stronger capacities and tools to provide foresight and anticipate change. It will need greater attention to building trainees' ability to learn how to learn.

In recent years, it has been widely acknowledged that employers' voices need to be heard more in TVET decision-making. This continues to be an important point to stress. The best skills systems have employers at their heart. Yet they are also systems in which economic rationales are understood to be complemented by social perspectives. These skills systems and the occupations they align to are seen to be growing citizens and not just workers.

It is possible to see some international models of skills development as superior to others, but they all have grown out of national traditions. Even the much-vaunted dual system has significant differences between its Austrian, German and Swiss forms, which proves that it is a system that should be not transported precisely in the same form, but contextualized. While there is much to be learned from other ways of doing TVET, wholesale importation of models is likely to fail when they are brought into environments with very different educational, work organization, social and cultural norms and conditions.

Presentations at the Global Forum made it clear that there are promising practices in TVET from which to build. There is much good

work already around youth employability and GTVET. However, more needs to be done to build practices in which employability and greening are seen as integrated rather independent issues.

Interventions are already showing how to ease transitions from school to work by sharing information, building trust and harnessing technological possibilities. The possibilities of new ICTs are being used to get appropriate information about labour markets and TVET courses to young people. There is considerable attention also to the importance of new pedagogical approaches. Entrepreneurship cannot be the answer to the whole of the young unemployment challenge, but there is much scope for increasing entrepreneurial skills and awareness among young people.

Greening of TVET is taking place through approaches that react to new occupational categories, build green skills into existing occupational training programmes, and which generate new resources for staff and learners. There are particular merits in using the fivefold notion of a holistic approach to greening TVET:

- greening the campus
- greening the curriculum
- greening communities
- greening research
- greening the culture.

This should help Member States and vocational training providers to align TVET transformations to be relevant to the changing patterns of consumption and production.

Challenges of capacity remain at all levels of TVET systems internationally, in teaching, management, planning and research. These require attention, and this has led the UNEVOC Network to commit itself to a new partnership for international TVET capacity-development that will mobilize the large international resource of its member organizations.

Research within the UNEVOC Network is blossoming. There are a range of new international research partnerships among UNEVOC Network members that are contributing to the Shanghai call to improve the TVET evidence base. UNESCO-UNEVOC

and the UNEVOC Network reiterated their commitment to improving the quality of applied and policy-relevant research on TVET and to continuing their roles as key TVET knowledge contributors.

The overall concept of transformative TVET refers both to the task of radically changing TVET itself and to the necessity of exploring how TVET can act in a transformative way to convey its influence at all levels. It stresses that TVET is not simply a factor in development but a catalyst. This vision argues that TVET must be more responsive to labour market demand but should also be generative of new demand. A focus on transformative TVET for SD demands an insistence on an integrated notion of skills for work and life. Skills are vital for employability, productivity and competitiveness, but also for addressing issues of environmental degradation, safe sanitation and community development. Skills support the broader work of human development, help societal integration and contribute to the building of identities. They also have a key role to play in addressing the major challenges of inequality and poverty. The insistence on sustainability also brings new concepts into the work of TVET, as it is charged to promote resilience and to plan intergenerationally. UNESCO and the UNEVOC Network will need to play a central role in turning these powerful words into equally powerful practices.

6.1 Facilitating TVET transformations using the UNEVOC Network

The new efforts of UNESCO-UNEVOC and the UNEVOC Network are based soundly in the concepts and commitments of the Third International Congress on TVET, and are further informed by the global policy process on SDGs, including the place of the education sector in them. UNESCO's work on TVET is indivisible from the broader UNESCO drive to improve quality and reduce inequality in schooling. The proposed SDG subgoal acknowledging the centrality of teachers applies equally to the TVET sector, notwithstanding its diverse nature.

The imperative of making TVET transformative was the key message from Shanghai. This means that TVET must not only change radically but

must contribute to wider societal change, now given greater clarity by the SDGs. The deliberations at Shanghai made it clear that TVET cannot be treated as just a matter of employability and productivity, of equity and inclusion, or of sustainability and well-being. Rather, for TVET to be genuinely transformative, it must combine all three lenses.

Furthermore, the Shanghai Consensus provides a toolbox that underpinned the Global Forum's deliberations.

1. It argued for more effective advocacy for TVET.
2. It made a clear commitment to issues of relevance and quality, equity and access.
3. It insisted on the importance of qualifications and pathways to empower learners and to communicate their skills effectively to employers.
4. It emphasized the centrality of partnerships and the need to include a range of stakeholders, especially employers, in governance at all levels.
5. It highlighted the importance of increased investment in TVET and diversification of financing.
6. It committed to a strengthening of the evidence base.

Clearly, the Global Forum's deliberations were aligned to this set of principles.



Participants during the UNEVOC Network Session

References

Corfee-Morlot, J., Marchal, V., Kauffmann, C., Kennedy, C., Stewart, F., Kaminker, C. and Ang, G. 2012. Towards a green investment policy framework: the case of low-carbon, climate resilient infrastructure, Environment Working Paper No. 48, Paris, OECD.

ILO. 2013. Global Employment Trends for Youth 2013: A generation at risk. Geneva, ILO.

OECD. 2014. What have we learned from attempts to introduce green-growth policies? Green Growth paper. Paris, OECD.

OECD and ILO. 2014. Promoting better labour outcomes for youth: Report on youth employment and apprenticeships prepared for the G20 Labour and Employment Ministerial Meeting, Melbourne, Australia, 10–11 September 2014. www.oecd.org/g20/topics/employment-and-social-policy/OECD-ILO-Youth-Apprenticeships-G20.pdf (Accessed 20 April 2015.)

Republic of South Africa. 2014. White Paper for Post-School Education and Training. Pretoria, Department of Higher Education and Training. www.ches.ac.za/sites/default/files/publications/White%20Paper%20-%20final%20for%20web.pdf (Accessed 20 April 2015.)

United Nations. 2002. Report on the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August–4 September 2002. New York, United Nations, para. 19. www.unmillenniumproject.org/documents/131302_wssd_report_reissued.pdf (Accessed 20 April 2015.)

UNESCO. 2012. Youth and Skills: Education for All Global Monitoring Report 2012. <http://en.unesco.org/gem-report/report/2012/youth-and-skills-putting-education-work#sthash.6RcbKfKm.dpbs> (Accessed 20 April 2015.)

---. 2014. Position Paper on Education Post-2015, ED-14/EFA/POST-2015/1 <http://en.unesco.org/post2015/sites/post2015/files/UNESCO%20Position%20Paper%20ED%202015.pdf> (Accessed 20 April 2015.)

---. 2015. Concept note on the Post-2015 education agenda, document submitted by UNESCO to the 37th Session of the General Conference. http://en.unesco.org/post2015/sites/post2015/files/UNESCOConceptNotePost2015_ENG.pdf

UNESCO-UIS. 2013. Adult and Youth Literacy National, regional and global trends, 1985–2015. UIS Information Paper. Canada. UNESCO Institute for Statistics. <http://www.uis.unesco.org/Education/Documents/literacy-statistics-trends-1985-2015.pdf> (Accessed 20 June 2014.)

Exhibition (14-16 October 2014)



Participants visiting exhibition booths

The Global Forum featured an exhibition that gave organizations and companies the opportunity to showcase innovative projects and education products in international skills education with a special focus on the conference themes Youth and skills and Greening TVET. It was formally opened by Professor Wassilios Emmanuel Fthenakis, Director of the Didacta Association of the German Education Industry.

With support from the Didacta Association of the German Education Industry, the exhibition showcased education concepts and products and high-quality teaching and learning materials from German and Austrian companies.

The following DIDACTA members and organizations supported the Forum through the exhibition:

DIDACTA Members

- **Bosch Rexroth Drive & Control Academy**
Innovations and Trends from Industry for Educational Institutes
- **Christiani**
Individually Tailored Training Material Made in Germany
- **Festo Didactic**
Innovations and Trends from Industry for Educational Institutes
- **LD Didactic Group**
The LD DIDACTIC Group is a leading global manufacturer of high-quality science and engineering teaching and training systems
- **Lucas-Nülle**
Excellence in Technology and Training Solutions
- **The Cool Tool**
TheCoolTool® stands for research, production and sales of innovative machines for model making, design, prototyping and education.

Promoting TVET and Development Cooperation in TVET

- **BIBB | Federal Institute for Vocational Education and Training**
- **German Commission for UNESCO**
- **GIZ**
- **WorldSkills Germany e.V.**



During the exhibition opening

Study Visit (16 October 2014)

- **Connected Schools**
The TVET Academy
- **Don Bosco Mondo**
Fighting poverty through education
- **Leonardo Award**
Implementation of beacon projects
- **DWV International**
Education for Everyone. Worldwide. Lifelong.
- **German Association for Water, Wastewater and Waste (DWA)**
Clear Concepts. Clear Environment
- **ENGAGEMENT GLOBAL gGmbH**
Global civic engagement – Service for Development Initiatives
- **Fraunhofer Institute for Applied Information Technology FIT**
Research for people

The Global Forum was capped by study visits to several companies in and around Bonn on 16 October. The objective of the study tours was to give the conference delegates the opportunity to gain practical knowledge of German flagship initiatives ranging from innovation, research and education technology to renewable energies and the German vocational training system.

The study tours were attended by 80 conference participants.

UNESCO-UNEVOC extends sincere appreciation to all organizers for hosting the delegations and giving participants the opportunity to get an insight into their company, portfolio and training facilities.

BIBB and DWA

This tour took its participants to two sites: the Federal Institute for Vocational Education and Training (BIBB), a member of the UNEVOC Network, and a water treatment plant run by the German Association for Water, Wastewater and Waste (DWA).

BIBB conducts research on initial and continuing TVET and its progressive development. A presentation was given on the institute's role within the German TVET system, the dual training system itself and the training regulations for selected green job profiles. This theoretical introduction to the German training system and how the concept of sustainable development is progressively translated into green jobs, was combined with a visit to a water treatment plant where the participants had the opportunity to speak to apprentices and learn about the water treatment and filtration processes.



Participants during the study tour in BIBB



Study visit in DWA



Study visit in Currenta

Currenta

Currenta is a joint venture between the two chemical enterprises Bayer and Lanxess. It operates three industrial park sites in North Rhine-Westphalia across an area of around 11 sq km, with a workforce of approximately 22,000 employees.

Currenta provides training in over twenty scientific, technical, commercial and IT professions for the seventy companies based in these parks, qualifying almost 2,500 trainees on behalf of the Bayer Group and Lanxess in company-owned training laboratories, pilot plants and workshops, and its own technical college.

Participants were given a tour through the company's metalworking and electronics shops, its chemical laboratory and pilot plant, and had the chance to meet with trainees and trainers, and observe them working. The tour was accompanied with a presentation on Currenta's vocational training and pre-training services, ranging from the pre-training programme 'Jump-Start' to dual Bachelor of Arts and Science degrees, and a training programme for 'late bloomers', XOnce.

Ford Aus- und Weiterbildung e.V.

Founded in 1993, the Ford Vocational Training and Education Registered Society (Ford Aus- und Weiterbildung e.V.; FAW) offers a wide range of initial and further vocational education and training programmes, demand-oriented guidance and an effective coaching for companies and their employees. Altogether there is training for thirteen accredited professions in the commercial and in the industrial-technical sector at FAW, supplemented by two dual study programmes certified by a university degree.

Besides a comprehensive introduction to the German dual training system and FAW's role in providing in-company training, a special emphasis was given to the company's programme targeting vulnerable youths and its campaigns to attract female apprentices for jobs that are traditionally dominated by men.



Study visit in Ford Ford Aus- und Weiterbildung e.V.

Icon Institute

The Icon Institute is a Germany-based consulting company with its headquarters in Cologne. As part of the Icon Institute Consulting Group, the business unit Icon Education and Training implements complex projects and training measures in vocational education and training, capacity-building and organizational development on a global level.

The Icon Institute facilitated a study tour to the Technology Centre Aachen which is managed by the Regional Development Agency for the Technology Region Aachen (AGIT), which hosted the delegation. To promote entrepreneurship and business development, AGIT provides office space within the Technology Centre with subsidized rent and assistance in the design of business plans. With its position in the border-triangle between Germany, Belgium and the Netherlands, and teaching and research institutes nearby, the region offers a promising environment and market entry conditions.

The tour continued with a visit to a training centre (BGE) managed by the Chamber of Crafts and Trade Aachen. The institution offers courses certified with the German Meister degree (equivalent to a Bachelor degree) and other specialized training courses.



Study visit in Icon Institute

Lucas Nülle

Lucas Nülle is specialized in the development, manufacturing and sale of high-quality educational equipment and training systems for basic and advanced vocational training. In addition to teaching a broad theoretical background, particular focus is given on project-based vocational training with proven educational value.

'We are trying to make the technology visible for the student – we have to be able to adapt our products so we can make sure we are prepared for the technology of tomorrow', said a LN representative.



Study visit in Lucas Nülle

Besides model training equipment such as wind generators and car engines, Lucas Nülle's product lines for TVET in electronics, electrical and automotive engineering were presented. The participants toured the company's facilities and had an opportunity familiarize themselves with manufacturing processes and technology development.

Appendix One: Programme

14 October 2014 (Day 1) Tuesday

07:45–08:45	Registration (AAH Bldg Lobby)
	<i>Master of Ceremony Sonia Ana Leszczynski (Associate Professor and Head, Department of Education, Universidade Tecnológica Federal do Paraná–UTFPR, Brazil; UNEVOC Network Cluster Coordinator)</i>
08:45–10:45	Plenary 1: Opening and Keynote Session (AAH Bldg upper and lower conference rooms)
	Welcome by the Organizing Institution
08:45–08:50	Welcome Remarks Shyamal Majumdar (Head, UNESCO-UNEVOC)
	Welcome by UNESCO & the Host Government
08:50–09:00	Welcome Message Svein Osttveit (Director, Executive Office, Education Sector, UNESCO Paris)
09:00–09:10	Welcome Message Heike Kuhn (Division Head, Federal Ministry for Economic Cooperation and Development –BMZ, Germany)
09:10–09:20	Welcome Message Verena Metzger-Mangold (Vice President, German National Commission for UNESCO)
09:20–09:30	Welcome Message Maximilian Metzger (Deputy Director General, BMBF Germany)
	Keynote Address
09:30–09:40	Introduction of Keynote Speaker Borhene Chakroun (Section Chief, UNESCO Paris)
09:40–10:00	Keynote Message Joe Samuels (Chief Executive Officer, SAQA South Africa)
10:00–10:45	Q&A with Messages from Youth representatives
10:45–11:15	Coffee/Tea Break
11:15–12:15	Plenary 2: HRD for Sustainability in the post-2015 agenda: Response of OneUN in Bonn (AAH Bldg upper and lower conference rooms)
	The session will draw upon the perspectives of five of the 18 agencies of the UN in Bonn to highlight the OneUN response on key issues in human resource development and how these are affecting the achievement of development goals including sustainability. The challenges of climate change, loss of biodiversity, desertification and how these issues are shaping sustainable human resource development and setting the stage for achieving a people-centred and a planet-sensitive development post-2015 will be discussed in this session.
	<i>Chaired by Marc Jan Eumann (State Secretary, Ministry of Federal Affairs, Europe and Media, North Rhine Westphalia, Germany)</i>
11:15–11:20	Chairperson's introduction of the session
11:20–11:50	Perspectives from Amanda Mukwashi (Chief, Volunteer Knowledge and Innovation Section, UNV), Lyndle Lindow (Coordinator, Administrative and Finance Services, UNCCD), Juan Carlos Villagran (Head, UN-SPIDER), Nick Nuttall (Coordinator, Communications and Outreach, UNFCCC), Shyamal Majumdar (Head, UNESCO-UNEVOC)
11:50–12:15	Panel discussion with Q&A
12:15–12:45	Plenary 3: Transforming TVET through the UNEVOC Network (AAH Bldg upper and lower conference rooms)
	UNESCO-UNEVOC facilitates regional cooperation and North-South-South dialogue on TVET transformations through its Network of UNEVOC Centres present in all the regions of UNESCO – Africa, the Arab States, Asia and the Pacific, Europe and North America, and Latin America and the Caribbean. Consistent with the recommendations of the Shanghai Consensus and based on the thematic issues that have been identified as relevant by the UNEVOC Centres, UNESCO-UNEVOC organized in 2013 a series of regional consultations on youth employability and greening TVET. The outcomes of these consultations have been analysed and synthesized in light of the emerging expectations of TVET in the post-2015. This session will stimulate debates on transforming TVET systems in UNESCO's Member States to address issues linked to youth unemployment and sustainable development.
	<i>Chaired by Katerina Ananiadou (Programme Specialist, UNESCO-UNEVOC)</i>
12:15–12:20	Chairperson's introduction of the Session
12:20–12:25	Short video presentation
12:25–12:45	Presentation on Advancing TVET for Youth Employability and Greening TVET: Key Findings from the Global Synthesis Report Gita Subrahmanyam (Research Associate, London School of Economics and Political Science) with Reflections

12:45–13:00 Formal Inauguration of Exhibition (AAH Bldg upper and lower conference rooms & Atrium)		
Opening Remarks		
12:45–13:00 Opening Message Wassilios Fthenakis (President, Didacta)		
Partners from both the public and corporate sectors have been invited to showcase their innovative projects and products in TVET. A wide range of these projects and products, as well as tools and solutions demonstrating innovations in teaching and learning, TVET promotion and international development cooperation will be on display at the Global Forum venue. Exhibitors will be available to discuss the ideas behind projects and exchange information for future collaboration. Exhibitors include major manufacturers of education and training tools as well as national and international governmental and non-governmental organizations. The exhibition will provide a good opportunity for networking for all participants.		
More information is available at http://www.unevoc.unesco.org/go.php?q=SWL+2015++Exhibition		
13:00–14:00 Lunch		
14:00–16:00 Parallel Sessions 1–3		
PS1 Entrepreneurial skills – can entrepreneurial success be learned?	PS2 School-to-work transitions – perspectives from the formal and informal sectors	PS3 Private Sector Cooperation in TVET – what works?
<i>Room: LEU 2105</i>	<i>Room: AAH Upper conference room</i>	<i>Room: AAH Lower conference room</i>
<p>What can be done at policy level to facilitate young entrepreneurs? What skills are required to start and maintain a successful business? Which market conditions are ideal? Can entrepreneurial success be learned in formal education systems? Entrepreneurship is a career option and should be promoted as such. This session's objective is to provide inputs in the field of entrepreneurship education, including the views of entrepreneurs and practitioners.</p> <p><i>Chaired by Sulieman Sulieman (Programme Specialist, UNESCO Beirut)</i></p> <ul style="list-style-type: none"> • James Eder (Founder, The Beans Group, UK) • Souheir Sami Mouchawrab/ Mirna Mansour (Teacher/ Student, VTC of Bir Hassan, Lebanon) • Joshua Bicknell (Co-Founder, Balloon Ventures, UK) 	<p>How can the transition from the education system to the formal labour market be facilitated and coordinated more effectively? Which institutional set ups have proven to be successful and in what contexts? Is the high share of informal employment, particularly in developing countries, an indication that the 'formal' transition system has failed? The objective of this session is to describe and discuss the different types of school-to-work transitions, the effectiveness and challenges of different approaches and to draw conclusions based on empirical trends and concrete country examples.</p> <p><i>Chaired by Birgit Thomann (Head of Department, BIBB Germany)</i></p> <ul style="list-style-type: none"> • Diego Rei (Sr. Technical Advisor on Youth Employment, ILO ROAF, Addis Ababa) • Christian Brzinsky-Fay (Sr. researcher, Berlin Social Science Research Centre, Germany) • John Simiyu (Professor, Department of Technology Education, University of Eldoret, Kenya) • Marie-Josée Fortin (Director, International Partnerships, Colleges and Institutes, Canada) 	<p>It is incontestable that the involvement of the private sector is an elementary aspect of successful TVET systems. But to what extent and how should the role of the private sector be defined? Private sector involvement can range from the design of curricula and training programmes to the provision of work-based apprenticeships and resources. Which models of stakeholder cooperation have therefore proven to be successful? In other words: which 'solution' works and what framework conditions are required- politically and legally? This session will highlight a range of cooperation models providing the participants with the opportunity to discuss, learn from and challenge the presented approaches.</p> <p><i>Chaired by Borhene Chakroun (Section Chief, UNESCO Paris)</i></p> <ul style="list-style-type: none"> • Atul Bhatnagar (CEO, National Skills Development Corporation, India) • Yorck Sievers (Department Head, AHK Project VET, DIHK, Germany) • Ohuma Juliet Chukkas-Onaeko (DG/Chief Executive, Industrial Training Fund, Nigeria) • Leif Edvinsson (Special Advisor on Societal Entrepreneurship to the Swedish Governmental Foundation for Competence and Knowledge Development; Ambassador representing Sweden to Leonardo European Corporate Learning Award)

All Forum delegates are invited to join the Networking session round to be held at the 29th Floor, Langer Eugen (LE) Building.

16:00–16:30	Exhibition visit (Atrium)
16:30–18:00	UNEVOC Network Session: Knowing the UNEVOC Network Better (LE Bldg, 29th Floor) Session with UNEVOC Centres from Africa, Arab States, Asia and the Pacific, Europe, CIS and North America, and Latin America and the Caribbean Participants of the session are provided with a platform to make short pitches to explore synergies and build partnerships with UNEVOC Centres in different regions of Asia & Pacific, Africa, Arab, Latin America and Caribbean and Europe and North America regions. The session creates an open space for networking amongst participants in particular those who are from the Private Sector, NGO and Government representatives, and UNEVOC Centres across regions. Participants are invited to bring plenty of business cards, brochures or short hand-outs (in English) about your companies or organisations and be ready for the experience.
18:00	End of Day 1
Side Meetings	
17:30–19:00	Inter-Agency Working Group (IAWG) on Greening TVET and Skills Venue: VC128, 2nd floor, Langer Eungen Bldg.

15 October 2014 (Day 2) Wednesday

08:45–09:00	Reflections from Day 1 Keith Holmes (Programme Specialist, UNESCO)
09:00–10:00	Plenary 4: Beyond the ESD Decade: Response from the Inter-Agency Working Group (IAWG) on Greening TVET & Skills development A well-coordinated approach among international players has often been the missing link in pursuing a common sustainable development agenda. The IAWG brings together expertise from a wide range of international organizations to support initiatives for Greening TVET and skills development. The session will create a platform for inter-agency exchange, mutual learning and informing the global debate on the approaches and priorities of the IAWG members for fostering TVET and green jobs skills development. What common agenda could the IAWG pursue beyond the Decade of ESD 2014 and post-2015 to exploit the employment potential of green transitions and raise the quality, outcome and skills prospects especially for the youth will be explored during discussions in this session. <i>Chaired by Borhene Chakroun (Section Chief, UNESCO Paris)</i> 09:00–09:10 Chairperson's introduction of the session 09:10–09:45 Brief Statements on relevant initiatives Cristina Martinez (Advisor, Knowledge Sharing Alliance, OECD), Anastasia Fetsi (ETF), Kazutoshi Chatani (Skills Development Officer, ILO), Nicholas Sofroniou (Expert, Socio-economic Research and Analysis, CEDEFOP), Shyamal Majumdar (Head, UNESCO-UNEVOC) 09:45–10:00 Panel discussion with Q&A
10:15–12:30	Plenary Session 5: Promising Practices in TVET (AAH Bldg upper and lower conference rooms) UNEVOC has been collecting TVET promising practices from UNEVOC Centres and other institutions or individuals illustrating how the UNESCO Member States are addressing issues related to unemployment and skilling of young people, as well issues on sustainable development, and how TVET is being oriented to the emerging demands of greening societies and economies. The practices have been reviewed in terms of their impact, innovation and potential for replication. They will be shared in order to draw lessons from the success and pitfalls in implementing them with the aim to inspire and guide future initiatives. 10:15–11:25 Promising Practices on Youth & Skills <i>Chaired by Michaela Baur (Head of Competence Centre TVET and Labour Market, GIZ)</i> Chairperson's introduction of the session Presentations by Angelika Puhmann (BIBB Germany), Oussama Ghneim (CERD Lebanon), Natalee Plunkett (Heart Trust NTA Jamaica), Sola Aliu (SDRE Nigeria), Janaka Jayalath (TVEC Sri Lanka) Q&A 11:30–12:30 Promising Practices on Greening TVET <i>Chaired by Oliver Diehl (Senior Officer, Basic Policy Issues of Initial and Continuing Vocational Training, BMBF)</i>

Chairperson's introduction of the session
 Presentations by **Jisun Chung** (KRIVET Rep. of Korea), **Javier Bonilla** (INA Costa Rica), **Daniel LaBillois** (Cégep de la Gaspésie et des Îles, campus de Carleton-sur-Mer Canada), **Pradeep Joosery** (MITD Mauritius)
 Q&A

12:30–13:30	Lunch
13:30–14:00	Exhibition Booth Visits
14:00–16:00	Parallel Sessions 4–6

PS4 Greening TVET- Policies and approaches for meeting skills for sustainability	PS5 Teaching, learning and training Green TVET	PS6 Skills for inclusive societies
<p><i>Room: AAH lower conference room</i></p> <p>The session will explore and elaborate on the policies and approaches to orient TVET systems and enable them to empower youth and adults to become constructive agents of sustainable development, meet demands of new consumption patterns and production processes and advocate for sustainability at work, in communities and societies. To guide the discussions, guiding framework for greening TVET will be shared and discussed with the aim to stimulate the mainstreaming of this agenda into international, national and institutional policies and practices.</p> <p><i>Chaired by Jakob Rhyner (Vice Rector & Director, United Nations University- VIE)</i></p> <ul style="list-style-type: none"> • Shyamal Majumdar (Head, UNESCO-UNEVOC) • Christina Martinez (Advisor, KSA, OECD) • Liu Yufeng (Director and Research Professor, CIVTE, China) • Robert Mahlman (Director, CETE, USA) 	<p><i>Room: AAH upper conference room</i></p> <p>The transitions to a greener economy can create new employment opportunities as well as improve skills prospects for the youth. However, experience in many countries has shown that skills bottlenecks can be a serious impediment to maximizing these opportunities. The session will feature concrete examples and approaches to implement greening TVET in teaching, learning and training to support such transitions. It will provide insights to the qualification needs and the guiding principles for assessing the fields of work involved in greening TVET at the educational planning, teacher and trainer development and initial/continuing training levels..</p> <p><i>Chaired by Rupert Maclean (UNESCO Chair Professor of TVET and Lifelong Learning, HKIEd)</i></p> <ul style="list-style-type: none"> • Erik Swars (Senior International Manager, SFIVET, Switzerland) • Dagmar Winzier (Programme Specialist, UNESCO-UNEVOC) • Georg Spöttl (Head, Department of Work Processes and Vocational Education and Training, ITB Bremen, Germany) 	<p><i>Room: LEU 2105</i></p> <p>Recognizing the fact that all jobs have the potential to become "greener" and contribute to inclusive growth, both high-end skills for industry-based sectors as well as low-end skills for the informal and non-industry sectors have to be addressed in strategies in green skills development and adult education. This holds the promise of giving equal access for the poor, middle income and vulnerable groups to new opportunities for engagement in actual developments and ensures the building blocks for developing an inclusive growth and society. The session will introduce selected examples in methodological approaches and human capacity development oriented to anticipating skills needs, developing training programs and implementing projects for specific target groups and sectors.</p> <p><i>Chaired by Harry Stolte (Head & Team Leader, GIZ/UNEVOC Centre Magdeburg)</i></p> <ul style="list-style-type: none"> • Madhu Singh (Sr. Programme Specialist, UNESCO Institute for Lifelong Learning) • Hervé Huot- Marchand (TVET Expert, UNESCO Dakar) • Jose Fernando Araya (Director de Cooperacion Externa, INA, Costa Rica) • Margarita Pavlova (Director, UNESCO-UNEVOC Centre & Co - Director, Centre for Lifelong Learning Research and Development, HKIEd) • Steve Cumming (Program Manager, Youth Learning, The Mastercard Foundation)

16:00 – 18:00	Coffee/ Tea Break; Exhibition booth visits
18:00	End of Day 2/ Transfer to Dinner venue
18:30–22:00	River cruise dinner on the Rhein Princess (registration basis)

16 October 2014 (Day 3) Thursday

08:45–09:00	Reflections from Day 2
	Astrid Hollander (Programme Specialist, UNESCO Santiago)
09:00–10:15	Plenary 6: Fresh TVET Outlook: Multi-Stakeholder Response (AAH upper and lower conference rooms)
	The emerging development and education agenda, including UNESCO's position on education post-2015, defines a target and a set of guiding principles for TVET. To facilitate synergy of future actions, the session will provide a platform to share cross-regional, multi-stakeholder and multi-level perspectives to map a global TVET outlook beyond 2015.
	Chaired by <i>Simon McGrath</i> (Professor, University of Nottingham, UK)
09:00–09:05	Chairperson's introduction of the session
09:05–09:15	Messages from Youth representatives
09:15–10:00	Panel discussion
	Simon Bartley (President, WorldSkills International), Olga Oleynikova (President, IVETA), Cristina Martinez (Advisor, Knowledge Sharing Alliance, OECD) Peter Greenwood (Head, Evidence-based Policy-making Department, ETF), Borhene Chakroun (Chief, YLS Section, UNESCO Paris)
10:00–10:15	Q&A
10:15–10:20	Break
10:20–10:45	Plenary 7: Closing Session (AAH upper and lower conference rooms)
	Chaired by <i>Shyamal Majumdar</i> (Head, UNESCO-UNEVOC)
10:20–10:30	Remarks Reinhold Weiß (Vice President, BIBB Germany)
10:30–10:40	Remarks Günther Taube (Head, Education, Health, Social Security Division, GIZ Germany)
10:40–10:45	Closing Remarks by the Chair
10:45	End of the Global Forum

17 October 2014 (Day 3) Friday

UNEVOC Network Meeting (exclusive for UNEVOC Network Members)

Appendix Two: Speakers, chairs and participants

Speakers and chairs

Plenary sessions



Shyamal Majumdar
Head, UNESCO-
UNEVOC International
Centre for Technical and
Vocational Education
and Training



Svein Østtveit
Director, Executive Office
Education Sector,
UNESCO



Heike Kuhn
Division Head, Federal
Ministry for Economic
Cooperation and
Development - BMZ,
Germany



Verena Metzke-Mangold
Vice President, German
National Commission for
UNESCO



Maximilian Metzger
Deputy Director General,
Department of European
and International
Cooperation in Education
and Research (BMBF)



Joe Samuels
CEO, South African
Qualifications Authority
(SAQA)



Amanda Mukwashi
Chief, Volunteer
Knowledge and
Innovation Section,
United Nations Volunteer
(UNV)



Lyndle Lindow
Coordinator,
Administration and
Finance Services, United
Nations Convention to
Combat Desertification
(UNCCD) Secretariat



**Juan Carlos Villagrán
de León**
Head, United Nations
Platform for Space-based
Information for Disaster
Management and
Emergency Response UN-
SPIDER, United Nations
Office for Outer Space
Affairs (UNOOSA)



Nick Nuttall
Coordinator,
Communications and
Outreach
United Nations
Framework Convention
on Climate Change
(UNFCCC) Secretariat



Gita Subranhmanyam
 Research Associate,
 LSE Public Policy Group,
 London School of
 Economics and Political
 Science



**Wassilios Emmanuel
 Fthenakis**
 President, Didacta
 Association of the
 German Education
 Industry



Cristina Martinez
 Advisor, Knowledge
 Sharing Alliance,
 Secretary General
 Office, Organisation for
 Economic Co-operation
 and Development (OECD)



Anastasia Fetsi
 Head, Thematic Expertise
 Development (TED)
 Department, European
 Training Foundation (ETF)



Kazutoshi Chatani
 Skills Development
 Officer, Skills and
 Employability
 Employment Policy
 Department, ILO



Nicholas Sofroniou
 Expert, Socio-economic
 Research and Analysis,
 Cedefop



Angelika Puhlmann
 Deputy Head of Section
 "Passages to Vocational
 Training and Qualified
 Labor, Vocational
 Orientation, Program for
 Vocational Orientation",
 German Federal Institute
 for Vocational Education
 and Training (BIBB),
 Germany



Oussama Ghneim
 Head of the TVET
 Department; General
 Coordinator, Technology
 Education; Head,
 Educational TV and
 Radio Unit, Center for
 Educational Research
 and Development (CERD),
 Ministry of Education
 and Higher Education
 Lebanon



Natalee Plunkett
 Manager, Business
 Development and
 Workforce Solutions at
 the HEART Trust, National
 Training Agency,
 Jamaica



Olusola Aliu
 CEO/Principal Consultant,
 Staola Agencies Limited;
 Chairman, Board of
 Trustees of Society for
 the Development of Rural
 Economy; and Technical
 Partner, Nigeria Capital
 Development Fund



Janaka Jayalath |
 Director, Information
 Systems TVEC, Sri Lanka



Jisun Chung
 Senior Research Fellow
 and Director
 Center for Global
 Cooperation, KRIVET,
 Republic of Korea



Javier Bonilla Herrera
Head of Automotive
Mechanics, Costa Rican
National Institute of
Apprenticeship; Expert,
Technology Project
Management



Daniel LaBillois
Research Professor
Cégep (General and
Vocational College),
Gaspésie et des Îles
region (Quebec, Canada)



Pierre-Luc Gagnon
Research Project Manager
Centre d'initiation à la
recherche et d'aide au
développement durable
(Research Initiation and
Sustainable Development
Support Centre)
(CIRADD), Canada



Pradeep Kumar Joosery
Board Member, Human
Resource Development
Council and the
Mauritius Qualifications
Authority



Simon Bartley
President, WorldSkills
International



Olga Oleynikova
President, International
Vocational Education
and Training Association
(IVETA)



Peter Greenwood
Head, Evidence-
based Policy-making
Department,
European Training
Foundation (ETF)



Borhene Chakroun
Chief of Section, Youth,
Literacy and Skills
Development,
UNESCO Paris



Reinhold Weiß
Vice President,
Federal Institute for
Vocational Education and
Training (BIBB), Germany



Günther Taube
Head, Education, Health,
Social Security Division
Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ)
GmbH, Germany

Parallel sessions



James Eder
 Founder, Beans Group, UK



Souheir Sami Mouchawrab
 Teacher, VTC of Bir Hassan, Lebanon



Mirna Mansour
 Student, VTC of Bir Hassan, Lebanon



Joshua Bicknell
 Co-founder, Balloon Ventures



Diego Rei
 Senior Technical Advisor on Youth Employment, ILO Regional Office, Africa



Christian Brzinsky-Fay
 Senior Researcher, Berlin Social Science Research Center (WZB)



John Simiyu
 Professor, Department of Technology Education, University of Eldoret, Kenya



Marie-Josée Fortin
 Director, International Partnerships, Colleges and Institutes, Canada Executive Board, Canadian Council of Africa and the Canadian Commission for UNESCO



Atul Bhatnagar
 Chief Operating Officer, National Skill Development Corporation, India



Yorck Sievers
 Head of Department, AHK Project Vocational Education and Training (VET), Association of German Chambers of Commerce and Industry (DIHK)



Ohuma Juliet Chukkas-Onaeko
 Director General and Chief Executive, Industrial Training Fund (ITF), Nigeria



Leif Edvinsson
 Special Advisor on Societal Entrepreneurship to the Swedish Governmental Foundation for Competence and Knowledge Development; Ambassador representing Sweden to Leonardo European Corporate Learning Award



Liu Yufeng
Director and Research Professor, International Cooperation and Comparative Education Research Division, Central Institute for Vocational and Technical Education, Ministry of Education, People's Republic of China



Robert Mahlman
Director, Center on Education and Training for Employment (CETE), Ohio State University, USA



Erik Swars
Senior International Manager, Swiss Federal Institute of Vocational Education and Training (SFIVET)



Dagmar Winzier
Programme Expert UNESCO-UNEVOC Expert on Loan from the Federal Institute for Vocational Education and Training (BIBB)



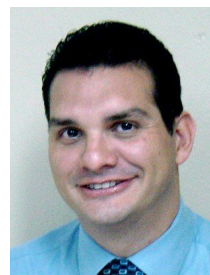
Georg Spöttl
Head, Work Processes and Vocational Education and Training Department, Institute Technology and Education (ITB), University Bremen



Madhu Singh
Senior Programme Specialist, UNESCO Institute for Lifelong Learning (UIL), Hamburg, Germany



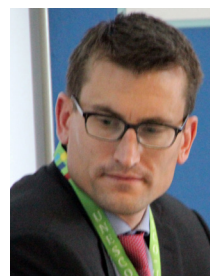
Hervé Huot-Marchand
UNESCO Regional Adviser for TVET for the Sub-Saharan region, UNESCO Dakar



Fernando Rodriguez Araya
Director, External Cooperation Department, National Training Institute (INA), Costa Rica



Margarita Pavlova
Director of the UNESCO-UNEVOC Centre (Hong Kong); Associate Professor, Department of International Education and Lifelong Learning Editorial board, International Journal of Vocational Education and Training



Steve Cumming
Program Manager, Youth Learning, The Mastercard Foundation

Chairs



Sonia Ana Leszczynski
 Associated Professor and
 Head, Department of
 Education, Universidade
 Tecnológica Federal do
 Paraná-UTFPR
 UNEVOC Network Cluster
 Coordinator



Marc Jan Eumann
 State Secretary, Ministry
 of Federal Affairs, Europe
 and Media, North Rhine-
 Westphalia, Germany



Katerina Ananiadou
 Programme Specialist
 UNESCO-UNEVOC



Sulieman Sulieman
 Programme Specialist,
 UNESCO Beirut



Birgit Thomann
 Department Head
 Federal Institute for
 Vocational Education and
 Training (Bundesinstitut
 für Berufsbildung/BIBB)



Michaela Baur
 Head, Competence
 Centre TVET and Labour
 Market, Department of
 Economic Development
 and Employment,
 Deutsche Gesellschaft
 für Internationale
 Zusammenarbeit (GIZ)



Oliver Diehl
 Senior Officer,
 Basic Policy Issues in
 Vocational Education
 and Training, Federal
 Ministry of Education
 and Research (BMBF),
 Germany



Jakob Rhyner
 Vice Rector in Europe and
 Director, United Nations
 University Institute for
 Environment and Human
 Security (UNU-EHS)



Rupert Maclean
 UNESCO Chair Professor
 of TVET and Lifelong
 Learning, Hong Kong
 Institute of Education
 (HKIEd)



Harry Stolte
 Team Leader, Human
 Capacity Development
 in TVET at the UNEVOC
 Centre Magdeburg



Simon McGrath
 Professor, International
 Education and
 Development, Centre
 for Research in Higher,
 Adult and Vocational
 Education, University
 of Nottingham, United
 Kingdom

Daily reflections



Keith Holmes
Programme Specialist,
Division for Basic
Learning and Skills
Development,
UNESCO Paris



Astrid Hollander
Education Programme
Specialist,
UNESCO Regional
Bureau for Education in
Latin America and the
Caribbean (OREALC),
UNESCO Santiago

Youth voice representatives



Sussane Berger
University of Cologne



Antje Wessels
University of Cologne



Purity Wamuyu Gitonga
Mastercard Foundation's
Youth Think Tank, Kenya



Arnest Sebbumba
Countryside Youth
Foundation, Uganda



Wouter de Regt
UNESCO-UNEVOC

List of participants

Last Name	First Name	Country	Organisation
Abdul Wali	Fairuz	Yemen	Ministry of Technical Education and Vocational Training
Abi Nader	Issam	Lebanon	Ministry of Education and Higher Education/ Higher Industrial Technical Institute
Abubakar	Muhammad S.	Nigeria	National Board for Technical Education (NBTE)
Adamson	Robert	China	The Hong Kong Institute of Education (HKIEd)
Adrian	Andreas	Palestine	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Ahmad	Naseer	Afghanistan	Afghan National Association for Adult Education (ANAFEA)
Al-Baidhani	Fuad	Yemen	Faculty of technological Science and Medicine
Alexandra	Cremer		UNU
Alhindaassi	Nourah	United Arab Emirates	National Qualifications Authority
Aliu	Sola	Nigeria	Society for the Development of rural economy (SDRE)
Al-Maghrby	Hashem	Yemen	Al-Jazeera community College (JCC)
Alsaid	Anwar	Qatar	UNESCO Cluster Office Doha
Alseddiqi	Mohamed	Bahrain	Ministry of Education
Amine	Miriam	Germany	German Institute for Development Evaluation
Aminullah	Adel	Afghanistan	UNESCO Kabul
Amiri	Alexander		WorldSkills International
Andrei	Angela	Romania	Institute for Educational Sciences
Barbieri	Cecilia	Namibia	UNESCO Office - Windhoek
Bartley	Simon	UK	WorldSkills International
Baur	Michaela	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Beglaryan	Lilit	Armenia	Global Developments' Fund (GDF)
Berger	Susanne	Germany	University of Cologne
Bhatnagar	Atul	India	National Skill Development Corporation
Bicknell	Joshua	UK	Balloon Ventures
Bogren	Kent	Sweden	Region Gävleborg
Boka	Kedibone	South Africa	Jet Education Services
Bonarius	Nadja	Germany	German UNESCO Commission
Bonilla Herrera	Javier	Costa Rica	National Institute of Apprenticeship (INA)
Brzinsky-Fay	Christian	Germany	Berlin Social Science Research Centre
Busian	Anne	Germany	University of Dortmund
Caetano	Manuel	Mozambique	National Directorate for Technical Education (DINET)
Celistre	Sinara Sant Anna	Brazil	National Vocational and Technical Education Department (SENAI)
Chakroun	Borhene	France	UNESCO Paris
Charchut Leszczynski	Sonia Ana	Brazil	Federal University of Technology - Paraná (UTFPR)
Chatani	Kazutoshi	Switzerland	International Labour Office (ILO)
Chukkas-Onaeko	Ohuma Juliet	Nigeria	ITF
Chung	Ji Sun	Korea, Rep. of	Korean Research Institute for Vocational Education and Training (KRIVET)

Last Name	First Name	Country	Organisation
Clayton	Dimitria	Germany	Ministry of Federal Affairs, Europe and Media North Rhine-Westphalia
Comar	Natacha	France	CISCO
Cumming	Steve	Canada	Mastercard Foundation
de Cartier	Caroline	France	Institut Europeen de Cooperation et de Development (IECD)
Diehl	Oliver	Germany	Federal Ministry of Education and Research (BMBF)
Diouf	Saliou	Senegal	École Normale Supérieure de l'Enseignement Technique et Professionnel (ENSETP)
Doherty	Funmilayo	Nigeria	Yaba College of Technology
Eder	James	UK	The Beans Group
Edvinsson	Leif	Sweden	Swedish Governmental Foundation for Competence and Knowledge
El-Gharad	Abdellah	Morocco	College of Technical Education of Mohammed V Souissi University
Elsharief	Elfatih Waheed	Sudan	Ministry of Human Resource Development
Eumann	Marc Jan	Germany	Ministry of Federal Affairs, Europe and Media North Rhine-Westphalia
Fan	Dayue (David)	China, P. R. of	Shenzhen Polytechnic
Fetsi	Anastasia	Italy	European Training Foundation (ETF)
Fortin	Marie-Josée	Canada	Colleges and Institutes Canada
Franke	Susanne	Germany	Don Bosco
Franzen	Franziska	Germany	Federal Ministry for Economic Cooperation and Development (BMZ)
Frede	Julian	Germany	Deutsche Investitions- und Entwicklungsgesellschaft
Fthenakis	Wassilios	Germany	DIDACTA
Gagnon	Pierre-Luc	Canada	Cégep de la Gaspésie et des Îles, campus de Carleton-sur-Mer
Gamel	Abdulrahman	Yemen	Ministry of Technical Education and Vocational Training
Gerhards	Thomas	Germany	Don Bosco
Gessler	Michael	Germany	University of Bremen
Ghneim	Oussama	Lebanon	Centre for Educational Research and Development (CERD)
Gitonga	Purity Wamuyu	Kenya	MasterCard's Foundation's Youth Think Tank
Gleissner	Kai	Germany	Institute for Vocational Education and Human Resources
Götze	Johannes	Germany	A2S Furnishing Systems
Grayaa	Khaled	Tunisia	School of Sciences and Technology of Tunis
Greenwood	Peter	Italy	European Training Foundation (ETF)
Gupta	Phalguni	India	National Institute of Technical Teachers Training and Research (NITTTR) Kolkata
Hagmann	Volker	Germany	Lucas Nülle
Hauser	Benedikt	Switzerland	State Secretariat for Education, Research and Innovation (SERI)
Hee Kim	Cheol	Thailand	UNESCO Regional Office - Bangkok
Heil	Christoph	Kosovo	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Last Name	First Name	Country	Organisation
Hindenberg	Jürgen	Germany	Chamber of Commerce and Industry (IHK) Bonn
Hj Md Sharifuddin Bin Hj Md Salleh		Brunei Darussalam	SEAMEO VOCTECH Regional Centre
Hofmann	Armin	Lao PDR	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Höhn	Sebastian	Germany	Journalist/Photojournalist
Hollander	Astrid	Chile	UNESCO - Santiago de Chile
Holmes	Keith	France	UNESCO Paris
Hummelsheim	Stefan	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Huot-Marchand	Hervé	Senegal	UNESCO Dakar
Isaac	Irene	Philippines	Technical Education and Skills Development Authority (TESDA)
Jaafar	Mohlis Bin	Malaysia	Ministry of Higher Education (MOHE)
Jamal	Fathi	Germany	Christiani
Jan	Ebben	Germany	
Jansson-Aalto	Mervi	Finland	Joint Authority of Education in the Espoo Region (OMNIA)
Jayalath	Janaka	Sri Lanka	Tertiary and Vocational Education Commission (TVEC), Ministry of Youth Affairs and Skills Development
Jemerigbe	Helen Ideli	Nigeria	Industrial Training Fund
Joosery	Pradeep	Mauritius	Mauritius Institute of Training and Development (MITD)
Jordan	Stephan	Germany	Currenta GmbH & Co. OHG
Kalitski	Eduard	Belarus	Republican Institute for Vocational Education (RIPO)
Kalvelage	Peter		Leonardo European Corporate Learning Award
Kamilova	Shalala	Azerbaijan	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Khaliqi	Bashir	Afghanistan	Afghan National Association for Adult Education (ANAF AE)
Klas	Tallvid	Sweden	Centre for Flexible Learning, Soderhamn
Klose	Reinhard	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Klumpp	Elfi	Germany	Festo Didactic
Koch	Gunter		Leonardo European Corporate Learning Award
Koegst	Günther	Germany	SOKRATES Wissenschaftliche Dienstleistungen
Kozieja	Gregor	Germany	German Aerospace Center
Kraus	Birgit	Germany	ICON-INSTITUT Education and Training
Kress	Hannelore	Germany	Federal Institute for Vocational Education and Training (BIBB)
Kreuzer	Julia	Germany	Federal Institute for Vocational Education and Training (BIBB)
Kuhn	Heike	Germany	BMZ
LaBillois	Daniel	Canada	Cégep de la Gaspésie et des Îles, campus de Carleton-sur-Mer
Lamichhane	Ram Hari	Nepal	Council for Technical Education and Vocational Training (CTEVT)

Last Name	First Name	Country	Organisation
Lee	Curie	Germany	University of Cologne
Lindow	Lyndle		UNCCD
Löffler	Hans-Günter	Germany	German Ministry of Foreign Affairs
Long	Michael	Qatar	College of the North Atlantic-Qatar (CNAQ)
Loveder	Phil	Australia	National Centre for Vocational Education Research (NCVER)
Mabille	Pascal	France	French NGO Connected Schools
Maclean	Rupert	China, P. R. of	Hong Kong Institute of Education (HKIEDd)
Mahlman	Robert A.	United States of America	College of Education and Human Ecology, The Ohio State University
Malina	Barbara	Germany	German National Commission for UNESCO
Mansour	Mirna	Lebanon	VTC of Bir Hassan Lebanon
Marinze	Ifeyinwa F. O.	Nigeria	Yaba College of Technology
Martinez-Fernandez	Cristina	France	Organisation for Economic Co-Operation and Development (OECD)
Mashauri	Muliro		UNU
Mastwijk	Sabine	Netherlands	Plan Nederland
Mbome	Jawea Efande		UNU
McClellan	Wendy	Barbados	Technical and Vocational Education and Training Council
McGrath	Simon	UK	Centre for Research in Higher, Adult and Vocational Education, The University of Nottingham
Mejía Barragán	Fabiola	Colombia	Technological School - Central Technological Institute (ETITC)
Merante	Stefano	Madagascar	Don Bosco à Madagascar, Bureau Technique de Développement Directeur
Metze-Mangold	Verena	Germany	German National Commission for UNESCO
Metzger	Maximilian	Germany	Federal Ministry of Education and Research (BMBF)
Mohamed-Ali	Jutta	Germany	Consulting Agency for International Vocational Education & Training
Mouchawrab	Souheir Sami	Lebanon	VTC of Bir Hassan Lebanon
Muhib	Shamsudin	Afghanistan	Afghan National Association for Adult Education (ANAFEA)
Mukwashi	Amanda	Germany	UNV
Muylkens	Monika	Germany	Federal Institute for Vocational Education and Training (BIBB)
Nagels	Kerstin	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Nimptsch	Juergen	Germany	Bonn City
Noebauer	Reinhard	Austria	Federal Ministry of Education, the Arts and Culture / General Directorate of Technical and Vocational Education
Noll	Hajo		Leonardo European Corporate Learning Award
Nuttall	Nick	Germany	UNFCCC
Ogoshi	Onawo Mohammed	Nigeria	House of Representatives Committee on Industry of the National Assembly
Oleynikova	Olga	Russian Federation	National Observatory on Vocational Education (Centre for VET Studies)

Last Name	First Name	Country	Organisation
Omarali bin Mujah		Brunei Darussalam	Ministry of Education
Osttveit	Svein	France	UNESCO Paris
Overton	Aubrey	Guyana	Council for Technical and Vocational Education and Training
Owono	Martin	Cameroon	Technical School of Nkolbisson (LTN)
Parua	Robert	Jamaica	UNESCO Office of the Caribbean
Pavlova	Margarita	China, P. R.	Hong Kong Institute of Education (HKIEd)
Peters	Ulrike	Germany	German Federal Environmental Foundation (Osnabrück)
Phiri	Mathews	Botswana	Human Resource Development Council
Phouvieng Phoumilay		Lao PDR	Technical and Vocational Education Department, Ministry of Education and Sports
Pilz	Matthias	Germany	University of Cologne
Plunkett	Natalee	Jamaica	HEART Trust, National Training Agency
Puhlmann	Angelika	Germany	Federal Institute for Vocational Education and Training (BIBB)
Puntari	Anja		Leonardo European Corporate Learning Award
Raji	Moromoke N.	Nigeria	The State of Osun
Rathner	Martina	France	UNESCO Paris
Rei	Diego	Ethiopia	ILO Regional Office for Africa
Rello Rodarte	Alferdo Xavier	Mexico	National College of Technical Professional Education (CONALEP)
Rhyner	Jakob		UNU-Vie
Rodriguez Araya	Fernando	Costa Rica	National Institute of Apprenticeship (INA)
Rojas	Carlos		Leonardo European Corporate Learning Award
Romer	Hubert	Germany	WorldSkills Germany
Rowe Amonde	Marcia	Jamaica	HEART Trust, National Training Agency
Samuels	Joe	South Africa	South African Qualifications Authority (SAQA)
Sanabria	Luis Fernando	Paraguay	Fundacion Paraguaya
Sannerud	Arne Ronny	Norway	Oslo and Akershus University College of Applied Sciences
SARR NDIAYE	Mame Bineta	Senegal	Union Economique et Monetaire Ouest Africaine (UEMOA)
Savage	Charles		Leonardo European Corporate Learning Award
Schnitzler	Annalisa	Germany	Federal Institute for Vocational Education and Training (BIBB)
Schröder	Thomas	Germany	University of Dortmund
Schur	Wolfgang	Germany	DVV International
Schwertel	Markus	Thailand	Cisco Systems (Thailand) Limited
Sebbumba	Arnest	Uganda	Countryside Youth Foundation (CSYF)
Sediakina-Rivière	Ekaterina	France	UNESCO Paris
Seghers	Maud	Belgium	VVOB
Seim	Julia	Germany	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)
Sherani	Hameed	Afghanistan	Ministry of Education
Sievers	Yorck	Germany	Association of German Chambers of Commerce and Industry (DIHK)

Last Name	First Name	Country	Organisation
Simiyu	John	Kenya	Department of Technology Education, University of Eldoret
Singh	Madhu	Germany	UNESCO Institute for Lifelong Learning
Siong	Walter Chong Meng	Brunei Darussalam	Ministry of Education
Sisoulath	Soulikhamkone	Lao PDR	Vocational Education Development Institute (UNEVOC Centre Laos)
Sobhi	Passant	Germany	TU-Berlin
Sofroniou	Nicholas	Greece	European Centre for the Development of Vocational Training (CEDEFOP)
Sonntag	Jochen	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Spöttl	Georg	Germany	Institut Technik und Bildung (ITB) Universität Bremen
Steffen	Julia	Germany	DVV International
Stevens	Bernard	Germany	Lucas-Nülle GmbH
Stolte	Harry	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/UNEVOC Centre Magdeburg
Strux	Roland	Germany	Don Bosco
Subrahmanyam	Gita	UK	London School of Economics and Political Science
Suliman	Suliman	Lebanon	UNESCO Regional Bureau for Education in the Arab States and Cluster Office
Swars	Eric	Switzerland	Swiss Federal Institute for Vocational Education and Training (SFIVET)
Szogs	Astrid	Germany	
Szogs	Günther M.		Leonardo European Corporate Learning Award
Taibi	Zekrullah	Afghanistan	Ministry of Education
Taube	Günther	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Teuben	Joost	Netherlands	Centre for the Innovation of Education and Training
Theingi		Myanmar	Ministry of Science and Technology, Department of Technical and Vocational Education (MoST, DTVE)
Thomann	Birgit	Germany	Federal Institute for Vocational Education and Training (BIBB)
Thomas	Nchotebah K.		UNU
Turnwald	Alexander	Germany	ICON-INSTITUT Education and Training
Twine	Lez	Germany	Lucas-Nülle GmbH
Uckel	Klaus	Germany	Federal Ministry of Education and Research (BMBF)
Ugwu	Stanley I.	Nigeria	Industrial Training Fund
van Erckelens	Britta	Germany	Federal Institute for Vocational Education and Training (BIBB)
Villagran de Leon	Juan Carlos	Germany	UN-SPIDER
Vollmer	Thomas	Germany	Federal Institute for Vocational Education and Training (BIBB)
Weiss	Reinhold	Germany	Federal Institute for Vocational Education and Training (BIBB)

Last Name	First Name	Country	Organisation
Wessels	Antje	Germany	University of Cologne
Yaakub	Mohammed Naim	Philippines	Colombo Plan Staff College for Technician Education
Yalams	Simon Madugu	Jamaica	University of Technology (UTech)
Yee Mar	Naing	Myanmar	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Yufeng	Liu	China, P. R. of	Central Institute for Vocational and Technical Education, Ministry of Education
Zakareishvili	Marika	Georgia	Ministry of Education and Science

Promoting learning for the world of work



United Nations
Educational, Scientific and
Cultural Organization

UNEVOC

International Centre
for Technical and Vocational
Education and Training

UN Campus
Platz der Vereinten Nationen 1
53113 Bonn
Germany

Tel: [+49] 228 815 0100
Fax: [+49] 228 815 0199
unesco.org/unevoc
www.unevoc.unesco.org

Follow us on :
facebook.com/unevoc
youtube.com/unevoc
twitter.com/unevoc