Corporate HRD and Skills Development for Employment: Scope and Strategies

International Conference in Bali/Indonesia, 24–26 November 2008

On behalf of
Federal Ministry
for Economic Cooperation
and Development

UNESCO UNEVOC
INTERNATIONAL CENTRE
for Technical and Vocational
Education and Training

inWent
Capacity Building International
Germany

International Conference Corporate HRD and Skills Development for Employment: Scope and Strategies

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Edited by:
InWEnt (Magdeburg, Mannheim)
in partnership with
UNESCO-UNEVOC International Centre (Bonn) and
The Southeast Asian Ministers of Education Organization
Regional Centre for Vocational and Technical Education and Training
(SEAMEO VOCTECH)

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INTRODUCTION

As a major contribution to the United Nations Decade of Education for Sustainable Development 2005-2014, InWEnt, in partnership with the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training and the Southeast Asian Ministers of Education Organization Regional Centre for Vocational and Technical Education and Training (SEAMEO-VOCTECH), hosted an International Conference in Bali, Indonesia from 24 to 26 November 2008. The purpose of the conference, entitled "Corporate HRD and Skills Development for Employment: Scope and Strategies," was to share the National Qualifications Framework (NQF) models with the Association of Southeast Asian Nations (ASEAN) member countries in order to enhance skills-recognition arrangements across ASEAN, and to examine international tendencies in human resource development (HRD) at the workplace.

The conference aim was to

a) highlight and provide information on regional arrangements to serve as a context for discussing and potentially developing new measures for ASEAN,
b) outline the aims, objectives, and activities of InWEnt's current project: "Innovation Network South East Asia for Technical and Vocational Education and Training (TVET) and Sustainable Development,"
c) provide an overview of possible options for HRD in companies, to make the workforce and TVET graduates more employable by gearing vocational training more effectively towards the demand side, and to the needs of trade and industry, and
d) compare strategies and tools on HRD provided by the participating countries and donor agencies.

The conference programme is provided in Annex I, and a list of participants is found in Annex II. There were participants, who were drawn from Brunei Darussalam, Germany, India, Indonesia, PDR Laos, Sri Lanka, Thailand and Vietnam. The conference provided an opportunity to exchange experiences and knowledge.

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BACKGROUND 1: Skills Development for Employment: Scope and Strategies

Joachim Wagner

Towards Knowledge- and Skills-Based Economies and Societies: New Objectives and Challenges Concerning Human Resources Development and Training

A critical challenge society faces at the start of the twenty-first century is the attainment of full employment and sustained economic growth in a global economy and society. This challenge has recently become even more complex and demanding. Economic, social, and technological change is gathering pace and demands continuous policy and institutional adaptation in order to meet new needs and to seize the opportunities that are rapidly opening up in a world economy. It has been increasingly recognized that people's endowment of skills and capabilities, and their investment in education and training, constitute the key to economic and social development. Skills and training increase productivity as well as incomes. They also facilitate everybody's participation in the economic and social fabric of society[1].

However, the difficulties involved in putting into effect employment and growth-oriented policies that give high priority to education and training are formidable. Some countries are investing heavily in their human resources, e.g. advanced countries and rapidly industrializing countries (e.g. the Republic of Korea, Singapore, and others). Other countries, particularly poor countries, have not been able to maintain investments at sufficiently high levels to meet their burgeoning needs.

Unless these poorer countries, supported by the international community, implement effective policies for education and training for all, the skills gap is likely to grow even wider. According to the International Labour Organization (ILO), the overall goal of the global economy should be to provide opportunities for all people to obtain decent and productive work under conditions of freedom, equity, security, and human dignity. This requires the attainment of four strategic objectives that are vital to social progress: employment creation, supported by increased and effective investment in human resources development, learning and training for the employability, competitiveness, growth and social inclusion of all; promoting fundamental rights at work; improving social protection; and strengthening social dialogue. The ILO's framework of decent work addresses both the quality and quantity of employment. It provides the basis for a new type of human resource development and training policies.

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[1] ILO Report, ISBN 92-2-112876-8, ISSN 0074-6681

To master these challenges, Qualifications Frameworks are fundamental and vital. Thus, countries, enterprises and individuals need new systems (i.e. frameworks) for assessing, recognizing, and certifying the attainment of skills. Several concurrent developments have generated an intense debate over the qualifications frameworks. Among these developments are education and training system reforms for lifelong learning; the growth of enterprise-institution partnerships in training, the proliferation of training providers; the spread of workplace learning; active labour market policies that emphasize training and guidance; growing mobility in the labour market; as well as business's efforts to improve productivity and competitiveness through better human resource competency management. Therefore, the development of an NQF is in the interest of employers and employees as it facilitates lifelong learning, helps match skill demand with supply, and guides individuals in their choice of training and career. It also contributes to the accumulation of human capital and an economy's competitiveness.

As the development of "standards" is one of the major pillars of an NQF, it should be based upon sound labour and work analysis, which involves the social partners. They are an essential link between workplace employment requirements and programmes of learning, education, and training. They can guide continuous training programme development and adaptation, help individuals develop and maintain their employability over their lifespan, as well as provide a basis for making rational collective and individual investment decisions regarding learning and training. Standard setting is a work in progress, demanding continuous analysis and adaptation. While it generally takes place at the national or regional level, standard setting cannot be carried out in isolation from international workplace and technological developments. Competency standards must be internationally consistent as labour quality and qualifications increasingly determine product and service quality. Therefore, countries and industries need an institutional framework in order to develop coherent standards and systems of assessment, recognition, and certification.

New qualifications frameworks are being designed in many countries. Different countries have pursued different models for competency assessment and recognition. Some frameworks have been developed through government initiative, with the participation of the social partners, others by the private sector. There are also qualifications frameworks that are managed jointly by employers' and workers' organizations. Regional frameworks designed to improve training outcomes and workers' mobility are under discussion in many economic areas, e.g. the European Union (EU), the Southern Common Market (MERCOSUR), the North American Free Trade Agreement (NAFTA), and the Association of Southeast Asian Nations (ASEAN).

The ASEAN Perspective

In 2004, ASEAN founded the „Initiative for ASEAN Integration" (IAI). The strategic aim was to support the ASEAN region as a whole, and in particular the new ASEAN member states (Lao PDR and Vietnam) to overcome slow developmental progress. With growing populations, socially imbalanced economic developments, and the lack of qualifications, the IAI aims for an intensified integration of the ASEAN region within a framework for the ASEAN Economic Community (AEC) for the free flow of commodities, services, investment, and qualified workforces – all in an effort towards integration.

Against this overarching aim, all governments in ASEAN are dedicated to the TVET/VET sector, but most qualifications are only recognized within the given country or within specific sectors. Improvements are needed in institutional arrangements to make them more effective tools for national skills development, quality assurance, and labour flexibility.

In addition, there is a widespread perception in the region that globalization and economic integration are making learning and training policies even more important. A well-trained work force is the key to providing domestic firms with a competitive edge. Workers therefore require a higher level of training to adapt to accelerating technical and market changes. But this presents a major challenge to many countries in the region, which education and training policies alone cannot address. Their effectiveness and success depends on a number of incentive policies. They should go hand-in-hand with economic, employment, and other policies to establish, in an equitable manner, the new knowledge and skills-based society in the global economy.

In this context, the development of knowledge and skills cannot be a one-off effort, but instead needs to be a continuous, or a lifelong, process. The new Human Resources Development and Training Recommendation, adopted at the 2004 International Labour Conference, provides effective guidance for future education, training, and lifelong learning policies to assist member states dealing with these complicated issues.

However, many countries in Asia and the Pacific, as noted above, are struggling to respond to the skills needs of their workforce in a time of increasing globalization, which involves new technology and changing patterns of work. It is difficult for these countries to get access to the latest information in innovative training policies – or practice and system reform – that would allow them to make the necessary changes. At the same time, there are other more advanced economies in the region which have developed many new approaches to skills development as a response to the emerging challenges for skills development. There are many interesting examples in the region of how skills development has been used in an integrated way to promote social and economic development. There are, however, few means or networks available to facilitate the exchange of knowledge, products, and services as stated in the ILO Report[2].

[2] ILO Report, ISBN 92-2-112876-8, ISSN 0074-6681

In addition to the above-mentioned ILO effort, UNESCO country office (national bureau) leaders repeatedly voiced concern for more demand-led education and training, as well as labour and educational mobility within the ASEAN countries. They also wanted to develop a regional skills recognition process. In the process of identifying UNESCO`s themes in TVET, the need to establish and harmonize Regional Qualifications Frameworks (RQF) in TVET became predominant so as to enhance labour mobility amongst member states in order to promote multi-skilled labour for lifelong learning. To address these issues, the UNESCO-UNEVOC International Centre has prepared a discussion paper that examines various aspects of the development of national qualifications and provides guidance for countries aiming to set up, or reform, their qualification systems .

In this context, InWEnt has witnessed a growing number of ASEAN countries interested in NQFs . This has been the case since international and regional TVET experts recently voiced their concern for more demand-driven TVET, and more labour and educational mobility within the ASEAN region. However, despite the heightened interest, the full implication of developing such a framework for a country – including technical, institutional and financial preconditions, as the well as the need for commitment – are not always well understood. The development and implementation of an NQF is a demanding task and requires long-term commitment and investment, in particular for countries with limited technical and financial capacity.

[3] The Development of a National System of Vocational Qualifications, UNESCO-UNEVOC International Centre, ISSN-1817-0374

[4] NOTE: At very different stages of economic development and with very different cultural and political histories, either have introduced, or are in the process of introducing, some form of national qualifications framework (NQF).

BACKGROUND 2:
Corporate HRD: Scope and Strategies

Supporting Sustainable Economic Development through Labour Market-Oriented Technical and Vocational Education (TVET) and Corporate Human Resource Development (HRD)

Dr. Reinhard Klose, InWEnt

As an organization of international cooperation, InWEnt seeks to contribute to a secure and sustainable future. We are convinced that – with the joint efforts of all participants – a sustainable global development can be achieved. Our capacity-building activities through human resource development represents our commitment to this endeavour.

We have learned in the past decades of InWEnt's (and its predecessor organizations) mission, that:

- sustainable economic development and global growth requires well-trained people, competent institutions, and mutual learning processes between industrialized countries and developing countries, and secondly,
- that access to knowledge has become the key to development, growth, and the achievement of the Millennium Development Goals.

Therefore, InWEnt has kept a strong focus on cooperation with the private sector worldwide. The strategic importance of business partners – not only in TVET programmes – is reflected in the fact that almost 60% of InWEnt activities are business-oriented and directed towards small- and medium-sized enterprises, business associations, and chambers of commerce. Additionally, we cooperate with the productive sector in the framework of Public-Private Partnerships.

We also believe that the growing importance and global power of the productive sector assigns them a growing responsibility for socially and ecologically responsible behaviour. In the last few years, corporations have assumed a key role in shaping the globalization process. But they also have gained a strong self-interest in assuming responsibility due to their need for:

- well educated, skilled, internationally trained and flexible employees,
- stable market conditions,
- a fair, transparent, and secure investment climate,
- a positive image for their customers, and
- the long-term availability of non-substitutable resources.

Hence, it should be – and in many cases is already – the natural self-interest of the private sector to influence globalization towards more sustainable development. The importance of education and, especially, technical and vocational education and training for achieving sustainable development, cannot be underestimated. The upgrading of specialists is not only a key to competitiveness and employment at the individual and corporate level, but individuals are also more likely to gain employment if they are better qualified thereby increasing the and economic efficiency of the labour force. Education and training are also keys to social change. Therefore, InWEnt's activities are people-oriented because people are those who drive change. Without individual learning, there is no learning organization and no social change towards sustainability.

Involving those who promote change is, therefore, both the precondition for and the objective of our Capacity Building Concept. Vocational training plays a central role in achieving sustainability and it is therefore also central to the United Nations Decade of Education for Sustainable Development: TVET transfers the necessary know-how and skills to people, who can then shape their occupational situations toward sustainable development.

There is a need in many countries to correct a mismatch between output of the national TVET systems and the demands of business. Therefore, it is also the duty and is in the interest of the private sector – as outlined at the beginning – to foster their participation in the development and implementation of new TVET systems and new approaches.

The objective of the programme to "support sustainable economic development through labour market-oriented technical and vocational education (TVET) and corporate human resource development (HRD)" is to develop an integral concept aimed at enhancing corporate human resource development in Indonesia and other countries. It is based on InWEnt's Capacity Building Approach. The essential conception is:

Individual, advanced training is a necessity, but in itself is not sufficient, to initiate long-lasting change and development projects. Thus, individual learning needs to be broadened by supporting measures at the organizational and system levels. In this context, InWEnt applies the following instruments: dialogue, advanced training, building networks, and advisory services for human resources development.

The Meaning of 'Corporate Human Resource Development'

People mainly develop their professional skills at work through informal learning[1].

This informal learning is known as in-house learning, i.e. learning at the workplace. The qualification level a country, or region, in international competition can refer to is therefore

[1] In various international studies the extent of informal competence development is assessed at 70 to 90% (compare Dohmen 2001, p. 7; 178). In 1977 already, the OECD concluded that self-directed learning (as the conscious part of informal learning) represents "approximately two thirds of the total learning efforts of adults" (OECD 1977, p. 20).

not only – and often even not predominantly – dependent on formal education and training opportunities. It is more important what possibilities of learning and competence development the company's everyday life can provide.

In the past, the actual importance of informal corporate learning in the field of competence development has not been adequately taken into account. It is true that using companies as a learning place has always been constitutive of the dual system of Germany's vocational training. However, the dual system applies to basic training. The vast experience Germany enjoys in the field of corporate human resource development (e.g. concepts of workplace learning), has so far only played a minor role in the international training dialogue.

Corporate human resource development comprises both basic training concepts and competence development (lifelong learning). In addition to this, there are strategic efforts to change companies into learning organizations by improving "workplace learning", by optimising leadership skills and by interlinking the staff.

It is true that people learn autonomously and informally. However, this often happens without the targeted support of the company. This strategic integration and support of the employees' competence development is the main task of human resource development.

Many different requirements have to be met simultaneously in order to change companies into learning organizations:

- a skills-orientated attitude from leaders in politics and commerce,
- experience of the positive effects of systematic staff qualification in the company itself (best practices),
- executives who grasp the corporate, economic, and social meaning of continuous skills development,
- qualified employees who are able to analyse the company's requirements and to implement effective strategies of corporate development (basic and further training), and
- scientific research and university training in order to ensure the professionalism of human resource development.

The "corporate human resource development" capacity building is dependent on interlinking both staff and activities. The objective of the present integral approach therefore is to use the potential of already existing networks, e.g. chambers of commerce and association structures.

The "corporate human resource development" capacity building approach bundles the tools of dialogue, advisory service, and advanced training – the core of which will be International Leadership Training for those in charge of human resources.

At the same time, the prospective participants in an International Leadership Training will not be addressed as individuals but as a collective. This means that only those participants will take part – apart from a few exceptions – whose institutions are also involved in the capacity-building process.

Thus, the objective is a cooperation between selected chambers, associations, universities, and consultancy agencies in the region – aimed at enhancing the systematic use of basic and advanced corporate training resources that is through "learning at the workplace" as a common programmatic goal ("conception marketing") and at actively taking part in the dissemination and application of the necessary know-how.

Existing capacities and preliminary work in Indonesia and Asia will also be taken into account.

Thus, the objective is not just to implement a technically-orientated concept, but to analyse, strengthen, and foster regional resources and potential in the field of "corporate human resource development" (e.g. evaluation of existing studies, integration of regional experts, use of university education capacities).

The programme consequently follows a 'quiver' approach, according to which several tools such as InWEnt's instruments on policy dialogue, advanced training, networks, and advisory services will be applied. It is not only a capacity-building project that is offered, but rather the participation of organizations, companies, associations etc., in a "corporate human resource development initiative" by:

– conducting (regional) workshops on selected subjects of corporate human resource development (e.g. on training requirements in business analysis, leadership competence development, training-the-trainer measures, as well as strategies for "learning at the workplace"),

– taking part in establishing and enhancing a (regional) network of "corporate human resource development" which will provide a suitable (online) platform for exchanging experiences and information (possibly also linking up with already existing associations and using the internet),

– selecting bright, up-and-coming managers to take part in the International Leadership Training Germany on corporate human resource development and integrating the portfolio process of those participants into the corporate organization development (goal: "working on concrete concerns of the companies of origin in the project work phases during the course of study")[2],

[2] This conditioned participation follows the logic of modern human resource development which now tends to "set up" individual further education only in case that the achievements of such an individual further education clearly suit the organization development of the sender context. Target agreements and trainee contracts between sender institution, participants and further education institutes as well as portfolio strategies are essential elements of such "embedded approaches" of corporate human resource development.

– being involved in the implementation or evaluation of regional studies on corporate training needs, as well as a study on the present situation of corporate competence development,
– being involved in initiating a policy dialogue among politicians and business leaders on the future meaning of corporate human resource development.

The tools bundled in this "corporate human resource development" capacity-building programme are synergistically combined. This is achieved by only entitling the network partners in general to use single programme components.

Namely, it takes a communication system (online-based) in which information, as well as tools for human resource development, can be gathered on-site and made readily accessible. This "corporate human resource development communication system" is supposed to be "staffed" with participants from the International Leadership Training and all other network partners. Alumni, i.e. former participants and long-term partner institutions, should play a key role as active members in the communication system to be established as part of the project.

The individual project elements can be briefly characterized as follows:

a) Workshops that involve partner institutions and public policy makers that assess the future meaning of corporate human resource development.

Workshops are to take place bringing together local and regional partner institutions, e.g. training providers, universities, and representatives of trade and commerce, as well as relevant government organizations. These workshops aim at an in-depth analysis of the theme "corporate human resource development," and at clarifying the effect of the targeted bundling of measures. The main point will be – on the basis of state-of-the-art research – to show the adaptation of measures.

b) Benchmarking trips with national decision makers

International experience has shown that national decision makers (e.g. from training providers, representatives of trade and commerce, relevant government organizations, universities) need to be convinced of the necessity of continuous corporate human resource development and, at the least, must have experienced the positive effects of corporate human resource development models and strategies. For this reason, a chosen group of policy makers from Indonesia should have the opportunity to discover the initial and advanced vocational training approaches used in German businesses.

c) “Corporate human resource development” International Leadership Training Germany (ILT) Modern human resource development “lives on” in the belief of ownership. This means that sustainable competence development has to be based on the knowledge, experience, and expectations of the participants.

Thus, standardized qualification programmes – as in the present case – have to do a split between “preserving the standards” and integrating the “learning projects of the participants”[3].

International Leadership Training (ILT) provides training for technical and management staff in companies and institutions, so that they can then initiate and manage changes within their own organizations.

ILT participants spend a year in Germany, consolidating their technical know-how (in theory and practice), their management skills, and their capacity to implement change. In the run-up to this, they will already have undertaken a six-month technical and language preparatory course in their native countries, while simultaneously continuing their professional work. Most scholarship recipients already have an academic education and two years of professional experience behind them. Included is technical training and 3-4 months of on-the-job training/internship, as well as the preparation of a transfer project (to be coordinated with their respective institutions). Participants can consolidate their newly-gained knowledge and develop professional contacts.

In the course of their training, ILT participants use InWEnt’s Global Campus 21® Internet training platform. Once they have gained their ILT qualification, successful participants remain in touch with each other through InWEnt’s global network of former participants. The ILT on the Corporate Human Resource Development programme sets out to support partners in their effort to establish professional Human Resource Development (HRD) departments in their institutions, businesses, and training organizations. Providing ILT participants with the chance to experience effective organizations and companies in this area in Germany allows them to see how HRD concepts are applied and gives them a realistic idea of how HRD can be

[3] As the latest research on advanced education clearly shows, the adult learners are no “tabula rasa”. They rather start from different environments and problems when entering the learning processes which they use as a quarry – so to speak – for the further development of their own competences, which they had beforehand assessed as insufficient. Adults only learn effectively when (and only when!) the learning openings are clearly linked with these learners’ concerns. It can be concluded moreover that further education has to come off the mechanistic idea that “learning” is the necessary and always successful prerequisite for real competence development. This is only true to a certain extent. It is more important – as to the latest research results – to beforehand already identify the individually accentuated further education interests (learning projects), to then discuss them with the learners and to ensure in the course of further trainings that the learners always have the chance of evaluating the level of competence development on their own. An important precondition will be the further education portfolios or “logbooks” drawn up by each participant. At the same time an attitude of self-directed learning will be enhanced which will be of fundamental importance for a changing attitude in the teacher/trainer further education practice.

strengthened in their own institution. The practical experience of being able to work in German institutions and companies is the main focus of the programme.

The overall objective is to enhance professionalism among HR developers and training staff, as well as strengthening company involvement in corporate education and training.

The advanced education programme supports public and private training providers and the corporate sector in Human Resource Development (HRD). The ILT programme is designed for junior HRD professionals and junior HRD management staff in the corporate sector. The programme is similarly intended for specialised ministries involved in HRD and their implementation agencies/training provider.

d) Networking

The project not only addresses individual companies but industrial associations, businesses, etc as a whole. They should be inspired to join the programme "Corporate Human Resource Development Capacity Building," together with their member companies, using the elements offered in this network.

e) HRD plans with partner organizations

It is important that partner organizations take part in projects that have already started to implement human resource development approaches. The detailed participation requirements and training needs are to be coordinated with them. Eventually, the trainees themselves are supposed to work on learning projects in the context of their own personal development activities, by means of which a further link with the HRD planning of the partner institutes will be created.

f) Train-the-trainer courses with partner organizations (e.g. chambers of commerce, companies) in Indonesia

The advanced training of HR training staff is an important measure for participating enterprises.

g) Seminars/training courses for management staff

In most cases it is not sufficient to merely train those in charge of basic and further training. Managers must also grasp the importance of corporate human resource development for organizational development. For this reason managers also have to get in touch with the theme of human resource development, and then they must then acquire the fundamental knowledge and skills. This is also important since managers are to a large degree responsible for organizational learning, i.e. they usually have to provide learning opportunities at the workplace, and adequate scope for action to their employees.

h) Advisory support for training providers

The essential objective of the project is to enable local training providers to offer their own training modules on the theme of corporate human resource development in the future.

i) Project workshops for graduates of International Leadership Training
The participants in an ILT will work on a learning project that is closely related to development and innovative plans in their work contexts. It will be of major importance to carefully discuss the individually chosen project works with the participants. In this respect, workshops are to take place beyond online coaching.

j) eCoaching
The eLearning mentoring and eNetworking offered throughout the whole implementation phase should be continued after the completion of the ILT. In this respect, follow-up coaching with the online-based communication system is planned in order to ensure a better network. In the medium term, the operation of this communication system is to be passed on to the ex-participants/local partners – by means of which a new impetus will be given to the consolidation of a professional community.

k) Two follow-up seminars
A similar goal is to be achieved in the intended follow-up seminars, in which the plans mentioned above are to be consolidated.

PLANNED OUTCOMES

The conference gathered expertise from TVET government agencies, TVET – APEX organizations and social partners, HRD practitioners and national and international skills development partner institutions. They exchanged national and international experience in promoting NQFs, and employment-oriented skills development. Planned outcomes included:

- identifying issues/gaps and challenges, which documented trends in the establishment of NQFs, current approaches and lessons learned for addressing actual needs of NQFs, including further policy-oriented direction;
- an overview of strategies for implementing priority recommendations on NQF-related issues addressed;

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Dohmen, G.: Das informelle Lernen. Die internationale Erschließung einer bisher vernachlässigten Grundform menschlichen Lernens für das lebenslange Lernen aller. Bonn 2001. [Informal learning. The international development of a previously neglected basic form of human learning for the lifelong learning of all.]

– summary of policies and HRD strategies in companies that respond to the world of work;

– knowledge-sharing networks between participating institutions and organizations that foster country-to-country/region synergy of approaches in re-orienting occupational/skills/ competency standard setting, and HRD in companies.

THE WORK OF THE CONFERENCE

The conference was divided into a number of keynote sessions (each with its own technical panel), along with other introductory sessions. These formal sessions involved, (i) a series of presentations on issues dealing with the development of NQFs and HRD strategies, and (ii) several national presentations highlighting devel-opment efforts, both related to the establishment of NQFs and Corporate HRD. Four working group sessions were designed to explore the issues raised in the keynote addresses and national presentations, and dealt with a series of specific questions related to each technical session and the follow-up discussions.

Welcome Messages

Rupert Maclean
Director of the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC)

On behalf of the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, I would like to extend a warm welcome to all of you here at the International Conference on "Corporate Human Resource Development and Skills Development for Employment: Scope and Strategies". This conference will address many crucial issues related to corporate human resource development and technical and vocational education and training (TVET), and many examples from various countries in the region, as well as international initiatives, will be introduced. The conference has been organised by InWEnt, in cooperation with SEAMEO VOCTECH and the UNESCO-UNEVOC International Centre. UNESCO-UNEVOC is proud to be a partner in this important event, and I wholeheartedly thank both InWEnt and SEAMEO VOCTECH for their great efforts and the congenial cooperation.

The International Conference on "Corporate HRD and Skills Development for Employment: Scope and Strategies" provides an excellent opportunity for experts from around the ASEAN member states, as well as from international organizations and institutions from other regions, to share their experiences with and approaches to the development of skills standards for learning and training for the world of work. Important questions that I am sure will be raised in the presentations and discussions include

- What are vocational qualifications standards?
- How is a vocational qualifications system best implemented and managed?
- What guidance is available for countries aiming to set up or reform their vocational qualifications systems?

Education and training for the world of work has a special role in providing knowledge and skills that enable people to improve the quality of their daily lives. Linked with adequate employment opportunities, they can assist people in expanding their skills, raising their productivity and increasing their personal incomes, thereby leading to overall raised living standards and stronger, more competitive economies. Approached holistically, vocational education policies and practices can assist with the all-round development of individuals and prepare them for more active participation in society, paving the way for greater stability, harmony and inclusiveness.

In today's globalized economy, major forces driving changes in the world of work, such as

the knowledge economy and rapid advances in technology, have important implications for skills demand and human resource development and training. The use of new technologies, especially ICTs, new manufacturing processes and new modes of work organization have led to skills intensification and an increase in the demand for higher order skills. Countries such as India and China have already invested heavily in vocational education and training to address these demands, thereby enabling a shift, for example, of qualified employment from the USA and Europe to their countries, so laying a major plank in their economic foundations.

Around the world, TVET systems and programmes must adapt to the changing conditions and new demands. One of the challenges TVET is facing today is that of imparting skills and competencies that are applicable in a broad range of tasks and functions in the various occupations that a person might hold throughout his or her lifetime. Vocational education and training institutions can – and have to – become significant forces in shaping new structures of occupations. Skills standards, at the national, regional and even at the international level, play an important role in assessing competencies, improving transparency of qualifications, increasing the mobility of workers, and many other factors that are important for a thriving economy.

This conference will give valuable input into these and many other issues, and I expect the outcomes of the conference to be important contributions to the current international debate on the issue of qualifications frameworks and skills recognition arrangements.

The UNESCO-UNEVOC International Centre also considers all of the issues mentioned above in its work to assist UNESCO's 193 Member States strengthen and upgrade their TVET systems in the context of the overarching UNESCO goals in TVET, namely to assist Member States improve and integrate TVET as part of the global Education for All Campaign, and to assist the alignment of TVET with the tenets of sustainable development. The Centre supports innovative initiatives and overarching approaches to enhance education and training for the world of work, including skills standards. Much of its work is done with, and for, its worldwide network of specialised TVET institutions, the UNEVOC Network, which consists of more than 280 organizations – the so-called UNEVOC Centres – in 166 UNESCO Member States. The Network is a unique international framework and platform for interaction and collaboration among TVET practitioners from UNEVOC Centres in developed and developing countries, countries in transition and those in a post-conflict situation. The Network fosters and facilitates learning and the sharing of knowledge in TVET, including skills standards and qualification frameworks, as well as the formation of mutually beneficial partnerships.

The International Conference on "Corporate Human Resource Development and Skills Development for Employment: Scope and Strategies" provides an important opportunity to investigate many of the issues that are at the core of UNESCO-UNEVOC's work. I wish you a successful conference and am convinced that your discussions will be productive and inspiring.

Mohd Saiful Bin Haji Omar
Acting Director, SEAMEO VOCTECH Regional Centre

Formal skills recognition and enhanced skills recognition systems are essential in the labour market and during economic downturns; workers with the necessary skills can access appropriate jobs by showing potential employers certificates that attest to their skills (Ibrahim, 2008). To build a bridge toward a competitive workforce, education and training providers of industry needs could define and measure standards for specific skills, and even develop industry measures of skill attainment (Murphy, 2004). Entry level competency examinations, licensing mechanism examinations, certification, accreditation, assessments, articulation and other skills standards are now in place in most countries. They are at different stages of development and implementation.

Therefore, this meeting organized jointly by InWEnt, UNEVOC, and SEAMEO VOCTECH is very significant and timely. In the era of globalization, where the demands for a qualified workforce are ever increasing, the knowledge and skills required have become more complicated. Furthermore, job mobility is high. These factors have affected policies and practices in the field of vocational and technical education and training, especially in reference to skills standards, skills assessment, and certification. After examining what has been happening in the world, and more specifically among the SEAMEO member countries, the following points indicate the most salient trends in the area of skills standards:

1. From supply-driven to demand-driven qualification standards. Training providers used to play a dominant role in development qualification, or skills standards. The roles of other training stakeholders, such as business and industry representatives, as well as professional associations used to be very minimal, dependent on a request from the training providers. In an era when changes occur very rapidly, the role of business/industry is crucial to providing input about the skills needed in the workplace. The input is valuable to the training provider, not as a way to dictate what specific skills are needed by the trainees, but rather is used as a way to prepare trainees for their employability.
2. From partial assessment to holistic assessment of qualification. Most of the common practices in skills assessments are through examination and skills demonstrations. These types of assessments are still very important but are not enough to comprehensively measure a candidate's qualities and their reliability since tests and demonstrations are administered in a limited time and in a limited scope. The assessment of documents, such as a portfolio, is considered very crucial to providing input on a candidate's history and significant accomplishments, including remarks from previous employers, projects completed, personal experiences and others.
3. From single assessor to multiple assessors. Skills assessment previously conducted by training providers is now considered insufficient today. The issues of dissimilar criteria used by training providers, and the tendency to give high marks to their own trainees, have affected the credibility of training providers as sole assessor. The inclusion of business and

industry, professional associations, and/or labour organizations is necessary in order to enhance the recognition of the certificates.

4. From measuring knowledge and skills acquired at VTET institutions to a combination of formal, informal, and non-formal lifelong learning. Considering that learning processes can occur in various places and in various ways, assessment procedures should incorporate these different types of learning. The distinction among the three is becoming blurred and should not be over emphasized. The more important consideration is how well the candidates can perform their jobs.
5. From focusing on "hard" skills, to a combination of "hard" and "soft" skills assessment. Various studies have showed that in order to perform the job successfully, an employee should not only master specific technical skills, but he or she should possess other important attributes, e.g. team work ability, a work ethic, and communication skills. These "soft skills" are equally important, if not more so, than the "hard skills" and are therefore worth considering as part of the assessment process.
6. From local orientation to more global orientation in terms of scope and recognition. Skills standards are based on the demands of the market where the candidates are planning to work. Realizing that labour mobility is very high within and across nations, addressing the needs of local or even national demands has been deemed to be insufficient. The scope and contents should be broad enough to provide candidates with increased flexibility in order to work not only at the local level, but also at national or even international level. The candidates should be flexible whether they want to work for others or for themselves.

Focusing the three themes under skills standards: content and scope, assessment, and certification, this section will highlight some of the salient issues and challenges faced by Southeast Asian countries.

7. Standards

   The issue of what should be included in the skills standards, the basic (adaptive) skills, the specific (productive) skills, and the attitude/normative – or soft skills – should be addressed. In terms of scope, whether the skills standards will be focused on local, national, regional, or international level demands is another area that should be elaborated upon and agreed to.
8. Assessment

   The issue of who should assess the trainees, techniques, and types of as-sessment should be clarified and agreed to by the relevant stakeholders. Currently, training providers are the sole assessors. Considering that train-ing providers suffer a conflict of interests, independent or external assessors are necessary, such as business and professional associations.

   The assessment that relies too much on exams and skills demonstration should be accompanied with documents that can be supplied by the participants in the form of a portfolio.

9. Certifications

Who should issue the certificate is a problem because recognition of the certificate may depend on it. A reliable body should be formed that is recognized by the businesses/industries where the certificate is to be valid. If the certificate is meant for the national level, then a national body should be formed; similarly, if the certificate is region-wide, a regional body should be formed representing important stakeholders.

The efforts to develop and implement skills standards at different levels have been initiated in Southeast Asia. Some countries in the region have come up with skills qualification frameworks but, for various reasons, have not fully implemented them.

Realizing the importance of skills standards for training providers, learners/trainers, and employers, we hoped that from this meeting we could come up with solutions to assist countries in Southeast Asia, especially those who still face problems of implementing national skills standards. The establishment of national skills standards will be a very important factor in supporting or enhancing the implementation of the regional skills recognition that currently is being developed – and pilot tested – in certain areas.

SEAMEO VOCTECH as a regional centre that is very committed to its partnerships with other agencies. They want to take an active role in assisting the member countries in developing and implementing the national/regional skills standards and its recognition.

Skills Development for Employment: Scope and Strategies

(1) Application of Skills Standards, Testing and Certification at Training Providers Level

Paryono
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Abstract

Skills standards have been adopted widely in Southeast Asia with different levels of implementation and arrangements. At the training provider level, national skills standards have been used as a guideline in developing the curriculum or training plan, and preparing students or trainees to take the skills assessments or certification test. This paper explores current practices based on case studies in Southeast Asian countries and SEAMEO VOCTECH as a training provider. It focuses on the three main components of skill standards: the scope and contents of the standards, assessment, and certification. The paper describes the various actors who developed the standards, as well as the contents covered in them. In terms of assessment, the paper describes the actors who perform this function, and how the assessment is conducted (based on the Southeast Asian experience). SEAMEO VOCTECH – as a regional centre that assists member countries in enhancing the quality of their vocational and technical education and training in Southeast Asia – has experience both as training provider and as assessor. Since SEAMEO VOCTECH is associated with the Ministry of Education, skills standards are focused more on the formal education and training initiated by the Ministry.

Background

Skills standards have been a major topic of discussion at the national and regional level in Southeast Asia. The extent to which standards will cover local, national, regional, or international demands is also being debated. This is being assessed with the recognition that labour mobility within and across nations has been increasing in the global era. Also being discussed is whether the skills training contents should focus merely on knowledge and skills, or whether it should also include attitudes, work ethics, and other soft skills needed by the candidates.

The next issue concerning skills standards is who should assess the competencies. Paper and pencil tests and skills demonstrations are considered insufficient without examining the documents. The idea of holistic assessment is becoming more common and is used to reflect the various attributes of a candidate (e.g. knowledge, skills, and attitudes). In terms of assessment, that conducted by the training provider alone is now considered insufficient considering that employers are not involved. An assessment committee should be formed representing various stakeholders to improve certificate recognition. The other issue related to skills standards is certification and recognition. The evaluation will be transferred into a certificate that reflects the candidates' abilities in the areas being assessed. The level of certificate recognition from the employers will depend on various factors and one of them concerns the institutions or representatives who do the certification.

This paper contains a discussion of the above mentioned matters from the perspective of the training providers. As a training provider, SEAMEO VOCTECH has experience in this field that can be shared with conference participants. The company's involvement, both directly and indirectly, in skills standards and certification in the member countries, including the regional level, will be the bases of this paper.

Skills Standards: What Is It?

There are various definitions of what skills standards are. According to the National Skill Standards Board (NSSB), "Skill standards identify what people need to know to successfully perform work-related functions within an industry sector. Specifically, standards define the work to be performed, how well the work must be done, and the level of knowledge and skill required." (p.1). Skill standards consist of two components: (1) a description of the responsibilities needed for competent performance, and (2) a description of the knowledge and skills necessary to carry out these responsibilities (National Skill Standards Board, 2000).

In educational settings, skill standards define a facet of student performance that is measurable and built upon the skills learned as students progress through the educational system and into the workplace (Rahn, O'Driscoll, & Hudecki, 1999). In industrial settings, skill standards help those involved prepare for changes in both work and the economy (Wills, 1995).

According to Glover (1992), industry-based skill assessment and certification should (1) be independent of training providers; (2) use a variety of instruments; (3) recognize multiple levels of mastery; (4) promote broad training and continuous learning; (5) be geared toward high-performance work organizations; (6) be voluntary; and (7) be flexible in order to keep pace with technological developments.

The Benefits of Having Skills Standards

Skill standards have emerged from a belief that technology and market shifts have caused major changes in the skills and behaviours needed by the labour market (Bailey & Merritt, 1995). They presented sound arguments for improving the system of skill standards and certification. These included employer identification of qualified workers, reduced application screening costs, recruitment support, and overall improved public perception of credentialing organizations.

An improved set of skill standards would provide students with a benchmark of relevant knowledge and skills, and the motivation for attaining them. Other advantages of a national system for graduates would include improved access to a national labour market and promotion of geographic mobility. Students, employers, and the general public are then better able to evaluate education and training providers. Increased accountability of workers, and meeting the needs of business and industry, are also believed to result from the implementation of skill standards (Bailey & Merritt, 1995).

According to Boesel et al. (1994), the skills standards are useful in addressing the increase in labour mobility and movement between occupations. The skill standards also lead to more internal promotion by building career ladders within companies by using skill standards levels. Students are able to see concrete relationships between what they are learning in school and the actual jobs in the market. This prompts some lower level achievers to concentrate more on their schoolwork.

Faulkner (2002) describes skill standards as meritorious in articulating the skills and knowledge required by front-line workers in high-performance environments. It also serves as a benchmark that employees and employers can use to sustain a competitive edge. An advocate of skill standards and an active member in the national skill standards movement, Spill (2002) identifies multiple benefits to multiple stakeholders. The benefits to employers include enhancing their ability to communicate knowledge and skill performance requirements to new and incumbent employees and thereafter determine proficiency levels. They can also reduce the costs and risks associated with hiring new workers, while at the same time promoting existing employees. Individual employees and students benefit by being able to make informed decisions about financial resources for education and training. They can better communicate their skills and knowledge to current and potential employers.

Providers of education and training benefit because they can adapt course content which prepares graduates with the most current knowledge and skills necessary to meet the

performance requirements of employers. Additionally, education providers that adopt skill standards and certifications should expect to see enrolment increases, as their graduates' success becomes known. Finally, state and local education agencies can benefit because they have a framework for organizing successful internal operations with clear guidance for improved customer satisfaction and enhanced workforce preparedness.

What are the Scopes in Skills Standards?

Wills (1995) suggested that an ideal standards system should focus on the needs of the target populations. Specifically, he proposed that such systems should be (1) accessible, (2) flexible, (3) explicit, (4) progressive, (5) applicable to a wide range of career paths, (6) competency-based, and (7) should include assessment and certification by a third party. Advocates suggest that skills standards should (1) be uniform, industry-based, and endorse measures of skills at the level where the standards are being used, (2) result in a credits that are transferable across regions and states, and (3) be recognized by all companies.

What Assessment Approaches are Appropriate?

Several assessment procedure options are available. While the use of standardized tests (multiple-choice and short-answer) is common for most licensing and certification, they are not the best measures of most national skill standards achievement because they do not demonstrate higher-order thinking skills or problem-solving skills. Those standardized tests that do measure those aspects of the national skill standards are very difficult to develop and time-consuming for both the educator and the learner. Alternatives that better measure competency in national skill standards include: journals, demonstrations, checklists, and portfolios. These performance measures require a learner to create an answer, rather than memorize or list one. Alternative performance measures that involve real-world applications allow a student to showcase higher-order thinking skills and problem-solving abilities (Center for Occupational Research and Development, 1997). In case studies by Haimson and Husley (1999), two different assessment procedures were used to measure competency in the national skill standards. To evaluate students, teachers completed checklists and external assessments that were administered by external skill-standards organizations. External assessments were credible for most employers because the assessment criteria were clearly defined, and the evaluators were independent from the school. Although the external assessments were more credible than internal checklists, employers may place even more weight on the personal recommendation of a student's or graduate's previous employer than on an exam (Haimson & Hulsey). Employers prefer concise assessments, and do not want to wade through the portfolios of prospective employees (WestEd, 1998).

Certification and Credentialing

Certification and credentialing are sometimes used interchangeably, but they represent different concepts. Certification is particularly focused on job relevance. It is generally evaluated with a criterion-referenced performance assessment. Credentialing is more generic and reflects an accumulation of certificates (Carter, 2000). This paper was written based on the Centre's experience in assisting the member countries in skills standards and assessment and from examining practices in the member countries. Case studies from member countries were based on national reports from training participants.

Skills Standards Used by Training Providers

There are two main approaches to how skills standards are developed: top-down and bottom-up. In the top-down approach, skills standards are usually developed at the national level. The national body is formed representing various educational and training stakeholders. This body is typically made up of government representatives, business/industry representatives, professional association reps, and education and training specialists. Training providers will use this national skills standard as a guideline in developing the curriculum, training content, and assessment. Since most of the national skills standards are usually general, the training providers can interpret or enrich the contents according the local needs. Most skills standards of this type address the national-level.

At the implementation level, however, not all SEAMEO member countries have adopted the national skills standards, and this is due to various reasons, e.g.: the unavailability of the standards, limited scope of standards, and lack of enforcement and recognition (SEAMEO VOCTECH, 2006). The second type of skills standard, the bottom-up approach, is developed by businesses or training certification companies who specializes in specific areas. At SEAMEO VOCTECH, for example, the IC3 (Internet and Computing Core Certification) and Microsoft Office Specialist by Certifort, U.S.A.; ICDL (International Computer Driving License), and e-Citizen by ECDL (European Computer Driving License) Foundation, and other various certification by Pearson Vue are some examples of skills standards developed by private business/industry. The second type of skills standards is usually more explicit and detailed in terms of scope and content.

Since the companies are usually for-profit organizations, they try to get as many participants as possible to generate funds. It is up to the employers to recognize the certification. The government has either minimum or no involvement in promoting or recognizing the certificates issued by these training and testing companies. Most of the skills standards adopted by training providers have been focused on prescribed skills to perform the relevant jobs; the employability, or soft skills, have not yet received enough attention. Efforts to integrate soft skills into the qualification framework should be continued, as these skills are considered by employers to be very important.

Assessment of Skills Standards at Training Providers Level

In this section, the paper will highlight assessors and their assessment methods commonly used by training providers in SEAMEO member countries. The most common assessment techniques used were written tests and skills demonstrations. The written tests mostly assess the knowledge of the participants in the areas being tested. The demonstrations were used to assess the participant's skills in performing related tasks. The use of documents, such as portfolio, is getting more popular in such countries as Indonesia, Singapore, Thailand, and the Philippines. Most training providers in the region hire their own trainers or instructors to assess participants' skills competencies. Indonesia is an exception since hiring the assessors from various stakeholders is a more common practice.

Certification at Training Providers Level

In a country where national skills standards have been developed and enforced, most training providers used the standards as a guideline in developing their curriculum, designing the course content, and assessing their students' or trainees' competencies. Training providers are the most common primary agents, responsible for issuing certificates. The next most common practice is for the certificates to be signed by two parties: the training provider and the business/industry partner.

In formal VTET, a graduate may receive a diploma and several certificates issued by private agencies. In Indonesia, secondary VTET students must take national examinations. They may also attain as many certificates as they want from other agencies like CISCO, Professional Association, or another training and certification provider. This tends to increase their employability. After examining various national skills standards in SEAMEO member countries, it was discovered that there are similarities and difference in terms of leveling and the scope covered. The following is a summary of commonly used national skills qualification framework in SEAMEO member countries.

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Table 1. National Skills Qualification Framework Adopted by Training Providers as Guidelines in SEAMEO Member Countries

Country	Qualification Type/Level	Level of Education/Training Required
Brunei Darussalam	Professional Level	University (3-4 years)
	Sub-Professional Level	Higher National Diploma (HND), 2.5 years after ND
	Technician	National Diploma (ND), 2.5 years Pre-National Diploma (PND), 1 year
	Master Craftsman	National Trade Certificate 1 (NTC 1), 1 year after NTC2
	Craftsman (Skilled)	National Trade Certificate 2 (NTC 2), 1-1.5 years after NTC3
	Craftsman (Semi-skilled)	National Trade Certificate 3 (NTC 3)/National Vocational Certificate (1.5 years after Form 3)
Cambodia	National Certificate Level 5 (Engineer)	A worker at this level performs complex techniques and specialized technical or scholastic skills that involve a wide choice of standard and non-standard procedures in a broad and often variety of context.
	National Certificate Level 4 (Technician)	A worker at this level performs a wide range of applications in a variety of contexts most of which are complex and non-routine.
	National Certificate Level 3 (Highly Skilled)	A worker at this level performs a broad range of varied work activities at a high level of competence involving known routines and procedures. The work context involves some complexity in the extent and choice of options available.
	National Certificate Level 2 (Skilled)	A worker at this level is competent in performing a prescribed range of functions in a variety of contexts where limited complexities apply.
	National Certificate Level 1 (Semi-skilled)	A worker at this level is competent in performing a range work activities most of which are routine and predictable.

Indonesia	Professional	University Graduates
	Higher Technician	Polytechnic or Diploma
	Technician	Senior Technical School Graduates
	Tradesmen	Senior Vocational School Graduates
	Semi-skilled (Operator)	Junior High School Graduates
	Unskilled (operator assistance)	Elementary school graduates
Lao PDR	Professional	Supervisory or management role, planning and managing new and complex jobs, supervising of groups, job evaluation and quality control (11 years of general education + 5-7 years vocational education and training)
	Higher Technician	Supervisory or management role, assisting professionals, planning and managing new and complex jobs (11 years of general education plus 3-4 years vocational education and training)
	Technician	Supervisory role, assisting professionals , managing workshops, middle management, planning and co-ordination of complex jobs (11 years of general education plus 2-3 years vocational education and training)
	Skilled	Working with an employer in specific trade, self employment possible with work experience (8 years of general education plus 2-3 years vocational education and training)
	Semi-skilled	Employment in specific skill areas, helper to skilled workers, medium (8 years of general Schooling plus 3 – 6 months training)
	Basic Skills Holder	Employment in specific skill areas, helper, lower level manufacturing (Completion of Grade 5/ equivalent plus 1 day to several weeks training)
	Practical Skills Holder	Self-help, improvement of livelihood (No pre-requisite to enter)

Malaysia (the description of each level is similar to the case of Cambodia)	SKM Level 5	Managerial Level (Advanced diploma/advanced diploma of technology/Degree)
	SKM Level 4	Supervisory Level 2 (Diploma/Diploma of Technology)
	SKM Level 3	Supervisory level 1(Diploma and certificate holder)
	SKM Level 2	Operation and Production Level 2
	Sijil Kemahiran Malaysia (SKM) (Malaysian Skills Certificate) Level 1	Operation and Production Level 1
Myanmar	Same as Cambodia	Same as Cambodia
Philippines	National Certificate 4/ Master Craftsman/Technician	Can translate engineering designs and concepts into practical actions, supervise the work of skilled workers and perform work of skilled workers and perform work involving programming, calculations, and the fine tuning of equipment, systems, and process.
	National Certificate 3/ Operator 3/Craftsman 3	Have the ability to lead small group to do a specific task, to analyze and evaluate trouble-shooting and perform whole range of work at high level of competence including those involving technical decision-making, limited interpretation and execution of plans and design.
	National Certificate 2/ Operator 2/Craftsman 2	Can perform fabrication works, operate relatively complex machinery and equipment and perform tasks with minimal tolerance such as finishing work.
	National Certificate 1/Operator 1/Craftsman 1	Can operate simple and basic machines and equipment, interpret and draw simple blue-prints and diagrams, perform routine tasks. Have the ability to do simple calculations and estimates and perform simple preventive maintenance.

Singapore	Master craftsman and para-professional level	National Training Certificate (NTC 1)
	Skilled worker level	National Training Certificate 2 (NTC 2) Industrial Technician Certificate (Engineering) Certificate in Business Studies (CBS)
	Broad-based basic skills at job entry level	National Training Certificate 3 (NTC 3) Certificate in Office Skills (COS) Certificate in Service Skills (CSS)
Thailand	Level I	(Fully skilled)
	Level II	(Skilled)
	Level III	(Semi-skilled)
Timor Leste	No National Skills Standards found	
Vietnam	Level 7	Highly Skilled Workers 3
	Level 6	Highly Skilled Workers 2
	Level 5	Highly Skilled Workers 1
	Level 4	Skilled workers 2
	Level 3	Skilled workers 1
	Level 2	Semi-skilled workers
	Level 1	Non-skilled workers (untrained)

Sources: SEAMEO VOCTECH, 2006; Alto et al., 2000

From Table 1, we can see that the way the SEAMEO member countries define group skills qualifications vary. Thailand and Singapore group the qualification into 3 levels; the Philippines has 4 levels; Brunei, Cambodia, Malaysia, Myanmar use 5 levels; Indonesia uses 6 levels; Lao PDR and Vietnam use 7 levels.

Regional Skills Standards

There has been a long process in coming up with skills recognition at the regional level. Training providers are eager to use the qualifications once they are in place. Considering the complexity of VTET systems in the region and complexity of the hiring mechanism and the criteria used by the country members, the regional skills recognition framework has progressed slowly. ASEAN, SEAMEO, ILO, MoEs, and MoLs from the member countries have worked

hand in hand and will continue to push through the idea of regional skills recognition arrangement in Southeast Asia. Small-scale pilot testing in the Hospitality and Tourism area in some member countries has been progressing. It is expected that more areas will follow and more countries will participated.

The following points were discussed and agreed upon at the Regional Workshop on Enhancing Skills Recognition Systems in the ASEAN 'Project Extension Phase 2' (held 29-30 November 2007 at the ASEAN Secretariat, Jakarta, Indonesia):

- A firm commitment from Cambodia, Lao PDR, Myanmar, Vietnam, Thailand, and Indonesia to participate in a sub-regional strategy for developing skills recognition arrangements by mid-2008 /09
- Establishment of a committee under SLOM to handle the development of the ASEAN common skills recognition arrangements- ASEAN Skills Recognition Committee [ASEAN SRC] by the end of 2008
- The starting up of a skills recognition website to share information on sets of competency standards and curriculum, assessment tools etc., by the end of 2008/09
- ASEAN SRC to oversee the development of competency standards and to develop guidelines for quality assurance and the issuing of national certificates by end of 2008
- Development of a model competency based curriculum for four occupations in which there are already sub-regional competency standards: i.e., welding, aircon technician, masonry, and poultry farm worker, by the end of 2009
- National structures and legislation to be in place to handle NQFs, competency standard development, coordination with an agreed upon ASEANQF, curriculum development, certification and quality assurance mechanisms by the end of 2010
- Development of common ASEAN-wide regional competency standards [ARCS] in a small number of occupations or industry sectors where there is already some commonality or movement towards this goal e.g., welding, air conditioning technician, tourism, electronic, and international trade sectors by the end of 2010
- Development of a common competency based model curriculum and assessment tools by the end of 2010
- By end of 2011, the development of CLMV/TI sub-regional competency standards [SRCS] for 20 occupations i.e., plantation worker, aquaculture technician, assistant computer network technician, food processing workers, brick layers, carpenters, electricians, plumber, tiler, nursing assistant / personal care workers.

Recommendations Due to Research Findings on Enhancing Skills Recognition Arrangement in the CLMV Countries (SEAMEO VOCTECH, 2006):

Governance:

1. To implement SRA, business and governments should share responsibilities to empower the existing SRA Authority (SRAA) to plan, execute, and evaluate initiative. This organization should formulate national competency standards and establish centres at which individuals can undergo an evaluation. A legal framework should be formulated to guide the implementation of the SRA.
2. Decision makers should advocate and promote SRA to responsible government departments/ministries, as well as other agencies.
3. A special fund in each CLMV country should be made available for the implementation of SRA.
4. In the case of VTOS (Vietnam Tourism Occupational Skills Standards System), the issue of sustainability should be addressed since the current funding from foreign donors will end in 2008.
5. Following the best practices of other SEAMEO countries, an SRA focusing on specific occupations should be piloted.
6. Terms of Reference of SRAA should be clearly defined.
7. A skills recognition mechanism should be developed and established. The mechanism should cover the steps or procedures of skills recognition, which include the agents involved in the process, as well as the information, materials/sources needed, credentials issued, the quality assurance, and accreditation.
8. The existing VTET qualification frameworks of CLMV countries should be reviewed through research initiatives that will be conducted and spearheaded by SEAMEO VOCTECH in collaboration with member countries and other agencies.

Quality Assurance:

9. Various approaches of skills assessment should be used to facilitate the needs of those being assessed (i.e. the assesees). Offering options to use any combination of practical demonstrations, oral assessments, written tests, projects, and portfolio will be helpful for these assessees. If the assesses have special needs, reasonable adjustments may be made in the assessment process.

10. The level of competency and grouping of occupations in CLMV countries should be well-defined and applicable within the region.

11. A workshop should be organized to profile credentials issued to VTET, such as competencies, occupational skills standards, vocational standards, and training standards. Such an initiative will be important to possibly regionalize the SRA.

Collaboration:

12. Networking and partnership should be strengthened among SEAMEO member countries, associate members, and other countries. Relevant publications and documents should be disseminated and shared among all countries concerned.

The involvement of business and industry is very crucial in this endeavour, since they will be the ones to recognize the certification. Follow-up meetings have been organized by various agencies including ASEAN, ILO, SEAMEO, and others.

Concluding Remarks

From the training provider's point of view, skills standards that are based on widely a recognized qualification framework, either national or regional, will definitely help them to come up with more suitable curriculum, training modules/materials and processes. Through this they can better prepare participants to achieve the skills certification. The skills standards should be easy to follow and broad enough to meet the needs of customers. It should not only focus on skills for employment, but also employability. The inclusion of soft skills is very important in the certification. The role of the training provider, therefore, is not only to prepare the participants for specific occupational skills, but to also nurture a trainees' personal attributes that will enhance their employability. Clear expectations in the form of skills standards will not only help training providers, but also the students/trainees to be more focused and motivated, to do their best. This not only helps future employers who will hire the graduates, but it also helps the community as whole who benefit from more productive members. The standards, however, should not be too exhaustive. This would defeat the purpose of TVET for employability, and TVET as provider of enjoyable learning alternatives.

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(2) Corporate HRD and Skills Development for Employment: Scope and Strategies

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India is a federal country with 28 States and 7 Union Territories. It is the largest democracy in the world. Skill Development in India interalia aims to support achieving rapid and inclusive growth through:

- Enhancing an individual's employability and ability to adapt to changing technologies and labour market demands
- Improving productivity and living standards of women and men
- Strengthening competitiveness, and supporting the process of economic growth.

Nineteen Ministries/Departments are involved in offering vocational training in different vocations. The Ministries of HRD and of Labour and Employment conduct training programmes to meet the skills requirements of the general labour market, whereas other Ministries/Departments are involved in sectorspecific manpower development. Among these agencies are the Department of Information Technology, the Ministry of Micro, Small and Medium Enterprises, the Department of Tourism, Housing Urban Development Corporation (along with others in the construction sector), Khadi & Village Industries Corporation, Ministry of Agriculture, Ministry of Food Processing Industries, Health and Family Welfare, Ministry of Heavy Industries and Public Enterprises, Ministry of Textile etc.

Skills development has received the highest priority at the highest level of Government. This is evident from the conglomeration of the following institutional mechanisms charge of coordinating a plan for integrating the efforts of skills development by various stakeholders:

- Prime Minister's National Council on Skill Development
- National Skill Development Co-ordination Board
- National Skill Development Corporation

At the national level, the Directorate General of Employment & Training (DGE&T), in the Ministry of Labour and Employment, is an apex organization for development and coordination of vocational training. This includes Women's Vocational Training to help increase the employability of youth and to provide skilled manpower to industry. Furthermore is provides employment services. Vocational Training is a joint project of both the central and state governments. The Government is advised by two tripartite bodies at the national level, namely the following:

– National Council for Vocational Training (NCVT)
– Central Apprenticeship Council (CAC)

The major functions of the NCVT are:

– to establish and award National Trade Certificates
– to prescribe standards – syllabi, equipment, and scale of accommodation, establish duration of courses and methods of training, periodical inspections of training institutions, and determining eligibility for the award of National Trade Certificates.

The major functions of the CAC are:

– to advise the Central Government in the framing of rules
– determining the "designated trades"
– laying down syllabi

Courses for school leavers:

– Craftsmen Training Scheme
– Multi-skill courses under the Craftsmen Training Scheme (Broad Based Basic Training)
– Four Model Industrial Training Institutes (MITIs) are under the DGE&T

Apprenticeship training for school leavers and ITI graduates:

– Apprenticeship training is offered to school leavers and ITI graduates through a network of 23,877 establishments in 187 designated trades. 0.26 million training seats are available in the establishment
– Six Regional Directorates of Apprenticeship Training (RDAT)
– State Government = Directorate of Technical Training/Directorate of Employment and Training

Women's Vocational Training programme

– One National Vocational Training Institute for Women (NVTI), Noida,
– Ten Regional Vocational Training Institutes for Women (RVTIs)

The whole world will face a deficit of skilled man power by 2020 according to the US Census Bureau and the Boston Consulting Group. By 2020, India will have a surplus of 47 million youth who will have the potential to become self sufficient and to become a major source of skilled manpower at international standards.

Strategy and Recent Initiatives at the National Level

- National Policy on Skill Development on anvil
- National Employment Policy – under preparation
- Revamping of Employment Exchanges
- Formation of Sector Skill Councils.

Strategy and Recent Initiatives at the Ministerial Level

(A) Upgrade of existing institutions
(B) Development of modular employment skills
(C) Set up new institutions
(D) Enhancing Employability
(E) Track changing trends/new skills requirements

Upgrade of Existing Institutions

(A1) Upgrade of 500 Government ITIs

- 100 domestically funded, and 400 World Bank assisted, at a cost of $355 million.
- Closer involvement of industry by forming an Institute Management Committee (IMC) headed by an Industry representative.
- IMC given financial and academic powers to help run the institute.
- Multi-skill courses – Broad Based Basic Training in 1st year.
- Advanced training in next 6 months, followed by specialized training in the industry for 6 months.
- Multi-entry, multi-exit options.

(A2) Upgrade of 1,396 Government ITIs through Public Private Partnership

- Cost: $725 million (US Dollars).
- 300 ITIs to start up every year from 2007-08 to 2010-11, and to remain in 2011-12.
- IMC is constituted with IP or its representative as chairperson, registered as a society & given financial & academic autonomy.
- Interest-free loan of up to $5 million is given directly to the Institute Management Committee (IMC), and is to be repaid by it in 30 years time.
- Interest free loan of $153 million (US Dollars) released to 300 ITIs during 2007-08.
- Capacity building programme for the principal and one senior faculty member of each ITI to which a loan was already issued during the year 2007-08.

(B) Skill Development Initiative Scheme

- Cost: $112 million.
- Target: 1 million trainees in five years and thereafter one million every year
- Demand-driven short term training courses based on Modular Employable Skills (MES) decided in consultation with Industry – until now, 308 courses have been notified.
- Flexible delivery mechanism (part time, weekends, full time, onsite/ off-site) to suit various target groups.
- Testing of skills of trainees by independent assessment bodies other than VTPs.
- Certification by NCVT.

(C) Setting Up of New Institutions

- Establishment of 1,500 new ITIs in un-serviced blocks.
- Establishment of 50,000 Skill Development centres.
- These are proposed to be in PPP mode with land by state government, viability gap funding by the central government and training and employment by corporate/private partner.
- "In-principle" approval received from the Planning Commission.
- Cost of preparing detailed project report may be met out of $61 million (INR 300 Crore) placed at the disposal of Planning Commission.

(D) Enhancing Employability

- Emphasis on Soft Skills
- Emphasis on Multi Skilled
- Encourage and support Industry participation.

(E) Track changing trends/new skills requirements.

(3) Policy Issues and Interventions in Establishing Skills and/or Competency Standards in Vietnam

Nguyen Tien Dzung
General Department of Vocational Education and Training, Ministry of Labour, Invalids and Social Affairs

Vietnam offers three levels of vocational training:
- Vocational elementary level
- Vocational intermediate level
- Vocational diploma

In total, 35,000 teachers work in vocational institutions.
In 2008, sixty sets of framework curricula were developed for sixty occupations. Subsequently, for each occupation, a framework curriculum has been developed. Skill standards are based on demand-driven analysis.

Methods of Skill Testing and Recognition for Vietnamese Labour

Skill testing methods consist of the following:
- Safety in work performance
- Work experience and knowledge
- Use of tools and equipment
- Efficient and correct use of equipment and machines
- Timely completion of work
- Work output meet quality regulations

Thus, they are designed to meet challenges such as:
- Lack of experience
- Regionalize and internationalize compatibility of standards
- An assessment system
- Capacity building for skill standard and assessment

The proposal for cooperation includes:
- Policy dialogue and exchange of experience
- Capacity building and personal development
- Knowledge and product transfer

(4) A Master Plan for TVET Development up to 2015 and Qualification Framework and Standard Setting in Lao PDR

Kongsy Sengmany
Director General of TVE Department
Ministry of Education

The National Development Vision for the year 2020, to focus on:
- Abandoning the status of being an underdeveloped country
- Sustainable development
- Regional Integration

TVET Master Plan 2008 – 2015
The TVET master plan that covers a time frame of seven to eight years comprises:

Equitable Access to TVET
Construction, Expansion, and Renovation of TVET Institutions
Expand TVET Offerings and Approaches

Improve Quality and Relevance
Develop and Improve TVET Teachers and Staff
Set up the TVET Quality Assurance System
Develop the TVET Information System

Improve Management and Administration
Improve the Organizational Structure of TVET
Formulate the Policy and Tools

Programmes and Projects
To give an example, there are two projects of equitable access in TVET. According to programme 1, the first project is concerned with Construction, Expansion, and Renovation of TVET Institutions. This includes:
- Improvement of Schools and Colleges in the Northern Region
- Improvement of Schools and Colleges in the Central Region

– Improvement of Schools and Colleges in the Southern Region
– Improvement of IVET Schools
– Improvement and Expansion of Skills Development Centers

Project 2 deals with the Expansion of TVET Offerings and Approaches, especially concerning:
– Determination of Training Needs and Employment Demand
– Development and Adjustment of Curricula
– Integration of new supplementary contents into school programmes and introduction of new learning approaches
– Implementation of the IVET concept
– Strengthening the Public-Private Cooperation in TVET
– Integration of agricultural subjects into lower secondary education
– Development and Implementation of Vocational Guidance

Programme 2 is about Improving Quality and Relevance (3 Projects).
Project 3: Develop and Improve TVET Teachers and Staff
1. Elaboration of the Plan for Training and Upgrading TVET Teachers and Staff
2. Institutional Development of Pre- and In-Service Training for TVET Teachers
3. Training of TVET Teachers and Staff
4. Improvement of regional and international cooperation to develop TVET Teacher Training

Project 4: Set up the Quality Assurance System of TVET
– Development and Implementation of standards for TVET Teachers and Staff
– Development and Implementation of standards for TVET Institutions
– Development of National Qualification Framework
– Development of National Occupational Standards
– Defining mechanism to assess skills and validate experience
– Review, adjust and implement mechanism for accreditation of curricula

Project 5: Develop the Information System of TVET
– Set up an information system for data collection, reporting and diffusion in MoE and other ministries
– Capacity development for TVET research and studies

Project 7: Formulate TVET Policy and Tools
– Revision of PM-decree and elaboration of master plan for TVET development up to 2020
– Implementation of TVET master plan
– Formulation and approval of incentive measures for promoting and supporting talent, women, disadvantaged students
– Formulation and approval of incentive measures for promoting and supporting employers/enterprises and communities

– Formulation and approval of legal frameworks for administering TVET Institutions
– Formulation and approval of legal frameworks for TVET budget allocation, development funds, and income generation of TVET institutions

Qualification Framework and Standard Setting

At present there are:
– 4 Universities, 13 faculties with 35,773 students, and 2,196 faculty members offering a range of certification from Higher Diploma to Doctoral Programmes
– More than 10 higher education institutions of line ministries and related organizations, e.g. law, banking, financing, culture, agriculture, army and police, offering HD and BA. There are approximately 10,000 students
– More than 86 private training institutions with approximately of 30,000 students and 1,200 faculty members
– 21 TVET institutions under MOE, with more than 1,500 teaching staff, and 15,000 more students training in difference subjects

Qualifications Proposed by TVET Strategy Paper

Qualifications are classified into 7 levels:
1. Practical Skills (Unskilled)
2. Basic Skills
3. Semi-Skilled
4. Skilled
5. Technician
6. Higher Technician
7. Professionals

The status and function of the NTC is:
– as a political body to ensure the further development of TVET,
– as coordination institution between public and private sectors on TVET development,
– to develop policy and guidelines for technical and vocational education/ training to propose to the Lao Government,
– to develop policy and guidelines for the budget allocation, and a master plan,
– to formulate a plan for establishing TVET Schools to propose to the Lao Government,
– the establishment and management of the National Training Fund to develop national professional standards, curriculum, training contents and certification,
– Monitoring and inspection of programme implementation,
– Cooperate with all parties, both national and international, in order to exchange experiences and cooperation in developing technical and vocational education and training.

Qualifications Proposed by MOLSW (2007)

- Vocational Qualification (Article 11):
  1. Attestation: Basic Skills training of less than 3 months
  2. Qualification Level 1: Vocational Training between 3-6 months
  3. Qualification Level 2: Vocational Training between 6-12 months
  4. Qualification Level 3: Vocational Training between 12-18 months
  5. Qualification Level 4: Vocational Training > 2 years
- Standard for Skilled Labour (Article 19):
  1. Skilled Labour Level 1: Semi- skilled worker
  2. Skilled Labour Level 2: Skilled worker
  3. Skilled Labour Level 3: Tradesman
  4. Skilled Labour Level 4: Supervisor

Status of Standard Setting

- NTC set up in 2002
- TWG (Wood & Furniture, Hotel & Restaurant, Construction, Handicraft, Textile, and Printing)
- 3 occupational standards endorsed by NTC chairman: wood & furniture, handicraft, and hotel & restaurant
- 4 curricula developed according to the standards: wood & furniture, handicraft, hotel & restaurant, and printing
- DACUM and Competency Based Training has been operational in Laos since 1990, with support of UNESCO
- Standard development started in 2002 in the Hospitality sector, supported by Australia, and implemented by the William Anglis Institute of TAFE, Melbourne & Hotel Association
- WS on Standard setting August and October with the support of InWEnt & GTZ

Challenges of TVET

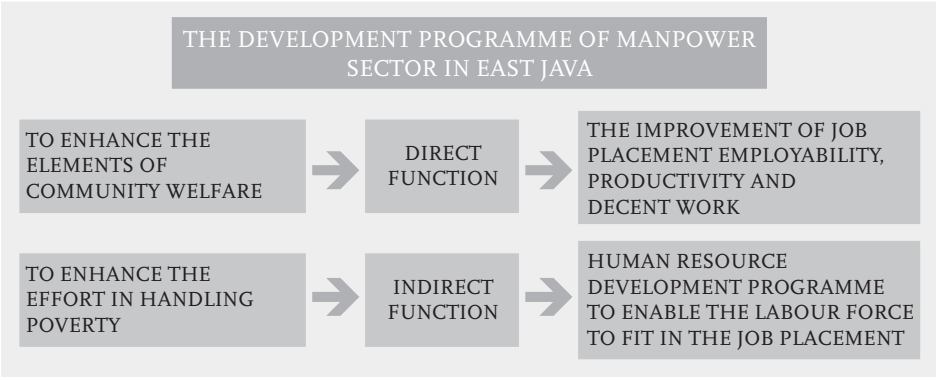
- Low quality and insufficiency of teaching staff and graduates
- Coordination among TVET stakeholders and providers is weak
- Lack of financial support for hardware and software
- Many TVET institutions are focusing on HD programmes instead of skilled level courses with low quality and insufficient skilled workforces.
- Mismatch of demand and supply.

(5) Establishing Skills and Competency Standards in Indonesia – Regional Perspectives under the Aspect of Decentralization: Challenges, Problems and Approaches

Drs. Bambang Sutaryo, M. Si
The Head Division of Training and Apprenticeship
Manpower Department of East Java Province Government

National competency standards need to be adapted to regional needs and occupational requirements of the industry. Workshops include:
- representatives of industry
- professional associations
- senior instructors
- experienced workers

Workshops need to focus on manpower conditions:
- The increase in unemployed labour force is the result of inadequate education, which limits access to work in the formal sector.
- Human resources do not have the qualifications to compete in the labour market, neither in and nor outside of the country.
- Due to the global economic crisis the job availability is limited.



(6) Expectations of Small- and Medium-Sized Enterprises (SME) Towards their Employees as a Means of Improving Vocational Training (System, Institutions, Teacher, Curriculum)

Bima Hermastho
HRD Indonesia

Multi Bintang Indonesia's (MBI) mission is to reach the first rank of BOEM (Brewery Operational Excellent Model) in Asia Pacific with the highest productivity and the lowest production cost PT. MBI has been applying the TPM (Total Productivity Management) programme. It consists of the following steps:

- PM Pillar (Planned Maintenance): contribute to time loss reduction caused by such things as broken bottles, power cuts, shut down censors, belt changes, lager, loose bolt, etc.
- AM Pillar (Autonomous Maintenance): to reduce time loss caused by the CILT (Cleaning, Inspection, Lubrication, and Tightening) process by searching the most practical, economical, and quickest way to improve it.
- FI (Focus Improvement): effective treatment to improve productivity.
- PQ (Progressive Quality): continually improving quality control.
- ET (Education & Training): improve the operator/technician's competence through training activities which are aimed at machinery specifications of MBI.
- SHE (Safety, Health, and Environment): aimed at the development of work safety and fitness (K3 / Kesehatan dan Keselamatan Kerja).

The objectives of ET are:

- To improve (old and new) the technician's knowledge, skills, and concentration in relation to the maintenance & repair activities of all equipment installed in Multi Bintang Indonesia Mojokerto. It should also minimize the breakdown time and CILT time of all equipment installed to be used for the production process of MBI Mojokerto.
- Set up within the factory neighborhood, controlled by the ENT Pillar, and managed by instructors from MBI Mojokerto.
- Identifying the training module which refers to the frequency of breakdown time and CILT time component.
- Preparing the teaching materials and multimedia according to the chosen training module.

- Preparing the teaching aids, models, training equipment, and the layout of training room according to the chosen training module.
- Preparing the training center and the technical trainers in Multi Bintang Indonesia Mojokerto.
- The provision of "Training Modules," complete with the teaching materials, which match the brewery process components with breakdown time frequency and high CILT time.
- The provision of "supporting means" (teaching aid, model, multimedia and lay out of workshop) which refers to the chosen modules.
- The provision of "Professional Training Instructors" from Multi Bintang Indonesia who are able to conduct trainings according to the chosen modules.

The strategy of Skill Training Center Development consists of:
- Identification of equipment on the brewery process
- Specification
- Type
- Capacity
- Load
- Process of work
- Installation of electrical
- Identification of equipment problems
- Equipment stocking strategy
- By : VEDC Malang Team cooperation with PT. MBI Team
- Location: PT. MBI Mojokerto

Identification of training modules:
- Identification of equipment which demonstrate a high frequency of breakdown time and CILT time
- Analysis of the types and causes of breakdown time
- Training need analysis per equipment
- Training facilities need analysis per module
- By VEDC & MBI team
- Location: VEDC Malang & SA Brewery
- Design of job sheet and lesson plan
- Prepared in the form of soft copy & hard copy
- Completed with multimedia layout
- Reference to training needs analysis
- By: VEDC Malang & MBI team
- Location: VEDC Malang & SA Brewery

Design of training facilities:

- Designed in the form model, trainer, tools, equipment, wall chart, and a miniature of the brewery installation equipment, by VEDC Malang & MBI team at the VEDC Malang & SA Brewery
- Adjusted to the facilities and rooms available Refers to effectiveness, efficiency, wellness and safety by VEDC Malang team & MBI team, at the PT. MBI Mojokerto
- The materials include all modules prepared for the SKILL Training Center PT. MBI Mojokerto. Strategy comprises of inhouse training in PT. MBI Mojokerto.
- Instructor candidates requirement: the applicant has competencies in basic electrical, electronic and mechanic skills
- Duration : 3 months
- Location : Training workshop of PT. MBI Mojokerto
- By: VEDC Malang & MBI team

The evaluation of the training impact calls attention to breakdown time frequency per component, total breakdown time per component, frequency of CILT time per component, and total CILT time per component.

(7) CNC Training – But How? Development of a German Skills Standard for CNC Education and Training

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For all experts there is no doubt as to the importance of international skills standards. Skills standards guarantee mobility, flexibility, and professional chances for trainees in the era of globalization. The development of such a skills standard which is accepted by all concerned parties is possible – but at the same time is not easy. The German CNC training system as a skills standard is an example, which we want to present in this paper. The development of country specific skills standards is a necessity. However in the German dual vocational education system – regarding independence in matters of education for each state of the German Federal Republic – the responsibility for practical training of the regional chambers (of industry and trade), and of the unions as social partners, is not easy to realize.

The following presentation will offer an overview of the development of the German skills standard for CNC education and training. It is the result of over 25 years of experience in CNC vocational education and training for the following professions: lathe and milling machinists, industrial mechanics, toolmakers, mechatronics, and skilled precision mechanics.

What are the inherent problems of CNC training? To begin with (for those unfamiliar with CNC): a CNC machine tool is the combination of a machine tool that carries out a particular processing method, e. g. turning, milling, eroding, grinding, toolsharpening, punching, cutting (by laser, plasma, water) etc., and of an electronic control, the socalled computerized numeric control (or "CNC"). Such computerized numerical controls were introduced at the end of the 1970s as part of the continuous development of NC (numeric control) technology, which had been established 15 years previously (mainly in the US aviation industry).

There is an old programming ISO/DIN standard dating back to the times of conventional NC technology. Unfortunately it was adopted for the CNC programming without updating it to include the new CNC technology. This standard only defines the most basic tool movements (straight and circular paths, rapid traverse) relative to a work piece, a coordinate system, work piece origins, and control commands (that is why to this day, the expression NC-programming is still being used even for CNC machine tools).

This is where the CNC training problem originates. Today, all CNC systems have their individual programming command sets that far exceed the old ISO/DIN standard. Furthermore, there is no standardization in sight. This means that the NC programming language has developed in very different directions, to some extent departing from the original standard altogether. This situation can in essence be described as programming language chaos.

The world's leading CNC system manufacturers are Bosch (G), Fanuc (J), Fanuc GE (USA), Fagor (Sp), Heidenhain (G), Mitsubishi (J), Num (F/Sw), Okuma (J), and Siemens (G). In the course of the last 25 years, these manufacturers have added their own machining cycles to the standard ISO/DIN, leading to the current vast range of control programming dialects, all of which have been given the designation of an ISO/DIN programming language. It is usually not possible to use the same NC programmes on different controls, as the programming language dialects of the DIN/ISO standard differ from each other too greatly: even to the point where it is impossible to exchange programmes between different CNC controls of the same manufacturer. This situation is aggravated by the fact that nowadays machine tool manufacturers can change and extend the programming syntax of their CNC controls. This wide variety of CNC machine tools and CNC controls is also seen in the large number of different CNC control panels, despite having the same function ranges.

CNC Learning Contents

A universal CNC qualification can be divided into 2 different learning contents, corresponding to the CNC machine tool, with the components CNC control and machine tool. The one learning content covers the theoretical basics of NC programming. These theoretical basics include machine specific connections between machine kinematics, tools, tool correction values, zero points, clamping devices, as well as cutting values and surface roughness.

The second CNC learning content concerns the machining technology. In practical training only a small part of the field can be dealt with, since machining technology with new tooling materials, tools, materials, clamping devices, and machine concepts (as well as the corresponding cutting values) come in a large variety and are in continuous development. Here it must be pointed out that the teaching of machining technology is only possible with a CNC production machine tool, which has the necessary machining power. However this is not the case when using CNC training machine tools. In lieu of this, an educational CNC machine tool can be replaced by a powerful training software with 3D simulation that achieves the same educational results, and saves on investment costs.

What is Special about CNC Qualification?

High demands are put on the trainee's theoretical knowledge (as well as on their basic school education where any lack of knowledge has to be made up for as part of the CNC training course). Such theoretical knowledge is required in the following fields:

– elementary mathematics: geometry, coordinate systems, geometry calculations
– basic mechanics: forces, levers
– reading and understanding technical drawings
– NC programming (in several programming language dialects)
– definition of cutting value parameters, tool mounting, and tool radius compensation
– machining time optimization of an NC programme, and
– quality control: measuring, surface quality inspection, and surface roughness.

There are no limits to the knowledge gathered by practical experience in CNC machining. It grows throughout the operator's entire working life (lifelong learning on the job). CNC machining technology is not dependent on an NC programming language. For a particular manufacturing task it involves:

– clamping the workpieces onto the machine tool (a science of its own);
– selecting tools, adapting the tools to the selected target machine tool;
– run-in of the NC programme on the machine tool,
– Surface quality, burr-free machining,
– optimizing the cutting values on the machine tool depending on machine tool behavior: chatter, vibration and precision under different cutting conditions,
– quality control: measuring, surface quality inspection.

What Abilities do Industrial Companies Expect as CNC Professional Competences?

Complete mastery of a machining method (e. g. turning and milling, grinding, cutting, etc.). Note that modern turning machine tools also carry out milling operations: millturn machining.

– to create NC programmes on the basis of technical drawings.
– to read and understand NC programmes from a workshop drawing in order to be able to run-in these on a machine tool (especially, for example, if the NC programmes were generated on a CAM system in a production planning department).
– to optimize cutting value parameters.
– to intervene in programme execution if an error occurs.
– to restart a programme after it has been aborted (e. g. in case of tool breakage).
– mastery of several CNC programming language dialects.
– care of the machine tools and preventive maintenance.
– Workshop organisaton (material and tool flow).

Development of CNC Vocational Education and Training in Germany

In no other profession in Germany have more different training schemes been tried out than in CNC education and training. The reason: as previously explained, very different requirements

were combined under the title "CNC Education and Training". The simplest solution was to adapt training to suit the specific requirements of individual application contexts, thus leading to training curricula with differing contents. The result was highly unsatisfactory. It took 25 years until the Centre for Developing Examinations and Teaching Materials – "PAL" (Prüfungsaufgaben und Lehrmittelentwicklungsstelle) of the Stuttgart Chamber of Industry and Commerce passed a new set of CNC training regulations for Germany in 2007, which finally met the industry's current CNC qualification demands.

PAL: "Prüfungsaufgaben- und Lehrmittelentwicklungsstelle" of the Stuttgart Chamber of Industry and Commerce. PAL is an institution connected to the IHK Stuttgart whose expert commissions include representatives of social partners, industry, unions, and vocational school representatives. They are responsible for defining the contents of training curricula and for organizing the theoretical and practical final examinations for all industrial professions in the German dual vocational training system. The diverging development of CNC control systems and the effect of this on CNC training was already apparent as long ago as 1980. This soon caused the German Federal Institute for Vocational Education and Training (BIBB) to conduct a large-scale trial model in 30 major companies over a two year period (1981-1982). The results that followed in 1983 led to a recommendation that a control manufacturer-independent programming language needed to be developed for CNC training. A corresponding CNC training programming language was then developed and proposed as the BIBB CNC control system for education and training.

According to the recommendations of the BIBB, CNC training should be conducted with suitable CNC training software in connection with a CNC production machine tool. After the opening of a tender in 1983, MTS received the order to develop this training software. In the following years the BIBB control was continuously adapted by MTS to the developments of CNC controls. These CNC training recommendations by the BIBB, visionary in their day, were rejected by the majority of German CNC control and machine tool manufacturers at the time – however not for reasons relating to vocational training. Instead, it was because each company wanted to increase and strengthen its market share with CNC training measures. Here they wanted to specifically teach trainees on control system and machine tool models by a particular manufacturer, with the expectation that the trainees' employers would then buy the same machines and control systems when they needed to expand. Until this day, all CNC control and machine tool manufacturers follow this train of thought, and CNC training is still utilized as a marketing instrument.

However, during this early phase of CNC technology training, due to a lack of guidelines at the time, the parties involved disregarded the need for standardized training curricula, teaching and learning materials, and standardized examination guaranteeing uniform knowledge of the candidates which allowed for a fair comparison of the candidates' results. As this meant that it was not possible to conduct comparable CNC examinations throughout Germany – because of the differences in the programming languages used – the German chambers of industry and commerce arranged for PAL (the central institution in Stuttgart

responsible for vocational training issues for all industrial professions) to follow the example set by the BIBB and introduce a first version of the PAL CNC control system for training and examination in 1987. This first PAL control had an elementary command set based on the ISO/DIN standards of the time (see www.stuttgart.ihk24.de/english/productlabels/training). The syntax of the BIBB training control system of 1983 was considerably more comprehensive than this.

The guidelines of the PAL also served simultaneously as a specification for software suppliers to develop corresponding teaching software. This was easily realized by MTS due to the reduction of the BIBB control system for training and examination purposes to the PAL training control command set. After initial objections, this PAL1987 control system for training and examination purposes was quickly adopted by vocational training schools and industry and gained wide support, even though the industrial companies deemed it to be too basic – a justified criticism if we compare with the BIBB proposal of 1983.

In 1994, this criticism led to enhancements resulting in the PAL1994 CNC control system for training and examination purposes, which included very simple machining cycles. However CNC training was still restricted to the machining processes 2-axis turning and 3-axis milling. In Germany, the PAL94 CNC control system for examination purposes was introduced into company training measures, vocational training schools, and colleges with great success. This lead to more uniform CNC programming training as well as more standardized and comparable examinations. For this purpose, PAL compiles new turning and milling exercises and examination tasks each year. CNC examinations are held on the same day all over Germany. The examinations are conducted using Cloze test methods. On the basis of a technical drawing, the candidate has to check a given NC programme and add missing data or NC parameter address values, or he has to programme a complete section of the NC programme.

The broad acceptance of the PAL control system for examination purposes was also supported by the realization over the last ten years that control system user interfaces change very quickly. This results in the CNC systems of many vocational training institutions' machine tools becoming quickly outdated. With the recent introduction of PC-based CNC systems, the PAL94 CNC control system no longer corresponded to state-of-the-art CNC technology and, as a result, criticism from training institutions and industry increased.

Therefore, in the period between 2005 and 2007, after an extensive analysis of the CNC systems currently available on the market, the PAL commission – responsible for CNC training – replaced the PAL94 control system with the new PAL2007 control system for examination purposes. The programming syntax was extended to include all modern machining cycles. The special feature of this is that multiface milling on 5-axes milling machining centers and complete millturn lathe machining on 5-axes millturn machining centers with counterspindles have been added to the language scope. This means that 5-axes machining, that is already possible on standard machine tools nowadays, and which all new control systems are capable of handling, can be included in training curricula from 2009 onwards. MTS, with its more than 27 years of CNC training experience, made decisive

contributions to the development of the PAL2007 CNC control system for training and examination. One year after being made public, the new PAL2007 control system received exceedingly good responses from all German CNC training institutions. The first CNC examinations, in which this new control system is to be used, will be held in 2009. CNC training is conducted using a combination of the PAL control system for education and training, and for examination on any production machine tool with any available CNC control system. This has been found to be the most favourable and efficient training option for practical training. Why has the PAL control system for examination purposes been so successful in its use?

The PAL control system for examination purposes has made CNC training into a key qualification measure. It enables trainees to be optimally prepared for the move to any CNC control system with an operating panel of any kind. They will be able to use any programming language to control any machine tool. These skills allow the trainee to get used to any CNC machine tool in a short time. An example for comparison: there is another technical skill, namely driving a car, for which a corresponding key qualification has been introduced all over the world and has become an accepted matter of fact. Everybody learns to drive a car by attending preparatory theory classes in a driving school. He trains on a car which will differ from the car he will later own – thus, the ability to drive a car shows a very similar key qualification. With every new car, one has to adapt to a different user interface, as well as to variance in individual vehicle behaviour. The same is the case with CNC training.

Why is CNC qualification needed in the form of a key qualification (as opposed to a CNC control-specific – or even machine-tool-specific – qualification)? In Germany, an average small or medium-sized manufacturing company (and this is true also for the whole world) may have between 10 and 40 CNC production machine tools. As such, machines have a very long service life (20 years or more) and because different machine tools are usually needed, i. e. purchased, for different production tasks, nearly all these machine tools are of different types and are equipped with different CNC control systems.

Professional technicians with CNC qualification will therefore have to be able to learn to use various control systems and machine tools, depending on the situation in their respective workshops. This is only possible if they have obtained the corresponding key qualification (similar to the way one can get into any rental car at an airport and then drive off after a brief orientation – e.g. determining which control element is where – and without having to read the operating manual first).

How is the Knowledge for this Key Qualification Taught in Germany?

Special CNC training software with machine tool simulation should be used to teach the whole theoretical learning contents of CNC programming. This is to be done with the PAL2007 programming language, as well as the construction principles of CNC machine tools, and the generally applicable relationships between machine tool coordinate systems, work piece coordinate systems, and tool correction values. PAL has defined exact requirements

that all suppliers of training software must meet with regard to 5-axis turning and milling centers, for tools with the means of clamping, and materials when developing the training software. CNC programming, beginning with simple machining contours and progressing to complex machining cycles (including 5-axis multi-face machining), is taught with the aid of realistic 3D machine tool space simulations and 3D material removal simulations for various types of machine tools which carry out the same processes. Thus the skills acquired get a practical workout through appropriate exercises.

Programming and control of the simulated CNC machine tools is to be effected via the PC keyboard and, as is normal on CNC control systems, using the function keys. The training software must be able to detect work piece clamping faults and collisions during machining, whereupon they are reported as errors. It must also be possible to measure the virtual work piece thus produced and to calculate the peak-to-valley roughness of the finished work piece surfaces.

An important step in training is the first time that acquired skills are applied to a production CNC machine tool. This is done using a translation programme (a post-processor) to convert the PAL CNC programme into the NC programming language of the CNC system of the production machine tool. The trainee must then apply his or her own skills to the new control system, thereby applying relevant knowledge flexibly. In Germany, final examinations are still conducted using Cloze test methods.

Recommendation

On the basis of the many years of experience gathered with manufacturer-independent CNC control systems for examination purposes in Germany, we recommend to all other countries, especially those with a rapidly growing industrial sector, that they adopt the conception of a CNC training curriculum similar to that introduced by PAL in Germany. It has a universally applicable control system for training and for trainees' final examinations. Provided that even the most complex, and therefore very expensive, machining centers can be efficiently simulated, the theoretical CNC knowledge and qualifications can be taught to larger groups without needing to have the real machine tools available for training. Nevertheless, we repeat: CNC production machine tools still need to be used for the practical parts of CNC training in order to be able demonstrate machining with real material cutting values and correct work piece clamping procedures. The use of pure training machine tools can only be seen as a transitional

solution.

CNC training software	Educational CNC machines	Production CNC machines
Low investment costs	Higher investment costs	High investment costs
No running costs	Low running costs	High running costs
No risk of damage	Low risk of damage	High risk of damage (and also injuries)
Classroom training of up to 25 students with one teacher	Training of max. 2 students on one machine, up to 4 machines with one teacher	Training of max. 2 students on one machine, up to 2 machines with one teacher
No real material cutting technology	No real material cutting technology	Realistic cutting conditions and technology

In a number of trials, this combination of CNC training software with CNC production machine tools has proved to be the most cost-effective and efficient way for CNC education and training.

Initial and Continuing Training of Teachers

As our international experience has shown to date, it is possible to carry out the required theoretical CNC programming training for teachers without problems. We have already held such courses successfully at many international locations. But we consider the major problems to lie in the practical part of teacher training, due to the large amount of experience required, which takes a long time to acquire and which is very costly to pass on since it requires the use of machine tools, and materials. It is also not possible for teachers to obtain practical CNC qualifications in brief continuous training courses. A teacher can only collect the necessary experience in the course of longer periods of intensive work with a CNC production machine tool. All over the world, there are many training centers which are equipped with modern machine tools but never used in their full machining capabilities, because the trainers have not been adequately trained.

The main advantage of the dual training system (practical training in the factories – theoretical training in vocational training colleges) becomes apparent in the training of practical skills, since this means that instructors are available who have production experience from their own work in the field. It is due to these difficulties presented by practical CNC training, that one must aim to separate practical training from all theoretical teaching elements, so that teaching on real machine tools is as efficient as possible. This can be achieved by obtaining a large part of the training content during preparatory courses using virtual,

„simulated“ machine tools.

MTS Experience in the Field of Manufacturer-Independent CNC training Outside of Germany

Our company has gathered a lot of experience in theoretical CNC training and supplementary practical training courses in many countries. It has indicated positive feedback of the success of this approach. We would like to name the following examples as references:

Application of neutral BIBB CNC control system for training and examination (comparable to PAL2007):

Italy:	since 1996	BIBB programming instructions and exercises used as teaching material
Poland:	since 1994	BIBB programming instructions and exercises as official schoolbooks
Russia:	since 2005	BIBB programming instructions and exercises as teaching materials
Turkey:	since 2006	BIBB programming instructions, exercises and CNC Basics as schoolbooks in 100 vocational schools
Czech Rep. & Slowakia:	since 1994	BIBB programming instructions and exercises as teaching materials
Viet Nam:	since 1999	BBB programming instructions, exercises and CNC Basics as teaching materials in the PPP teacher training projects GTZ and MTS in Ho Chi Minh City and in Hung Yen

For further information on the development of teaching materials, planning, and conducting examinations for CNC education and training in Germany, we would like to refer you to the PAL, Chamber of Industry and Commerce, in Stuttgart.

www.stuttgart.ihk24.de/english/productlabels/training

or www.stuttgart.ihk24.de/Aus-und Weiterbildung/PAL

and www.mts-cnc.com

Corporate Human Resource Development and TVET: Scope and Strategies

(1) Emerging Reforms in Vocational Education in India, Focusing on Indian Qualifications Framework

Poonam Agrawal
Joint Director PSSCIVE (NCERT)

TVET Systems in India

Educational reconstruction assumed priority after the independence of India. It was based on the ideas of such men as Mahatma Gandhi, Dr Radhakrishnan, Rabindra Nath Tagore, and Jakir Hussain, as well as recommendations of various Commissions and Committees, such as Education Commission (1964-66) in the National Education Policies. It lead to the concept of Basic Education (Nai Talim) by Mahatma Gandhi. It contains a review and a description of reforms in education throughout the world. India also adapted a new economic and social order in the area of TVET. The Indian education system is structured as follows:

1. 10+2 Education System. 10 years of secondary level education (1st-10th) and diversification of academic, technical, or vocational education at the post-secondary level (11th and 12th).
2. Higher education, with a minimum of 3 years at the Bachelor's level and a minimum of 2 years each at Master's and Doctoral levels. Longer for technical and professional degrees.
3. Some diversification opportunities are also available after VIII standard for those who do not wish to continue in the formal education system.

TVET in India

- Technical Education is entrusted to the All India Council for Technical Education (AICTE).
- Vocational Training is placed under the responsibility of the Director General of Employment and Training (DGE&T), in the Ministry of Labour and Employment.
- Vocational Education in India, referred to as VEP, is under the aegis of the Ministry of Human Resource Development (MHRD).
- India has a chain of polytechnics (more than 1,300) providing broad-based education after X standard in engineering and some non-engineering areas. The polytechnics usually offer 3-year programmes leading to a diploma.

Technical Education is entrusted to the All India Council for Technical Education (AICTE). AICTE functions include:

- Planning
- Co-coordinated development
- Quality assurance
- Monitoring
- Evaluation
- Technical and managerial education, training and research at various levels (diploma, undergraduate, post graduate level.

Areas Covered by AICTE

- Engineering and Technology
- Computer Applications
- Information Technology
- Architecture
- Town Planning
- Management
- Pharmacy
- Applied Arts and Crafts
- Hotel Management
- Catering Technology
- Vocational Education
- Industry Linkage

Vocational Training in India functions under the Director General of Employment and Training (DGE&T), part of the Ministry of Labour and Employment. The DGE&T covers training services for all categories of jobs through Industrial Training Institutes (ITIs). DGE&T is the nodal department for formulating policies, laying down standards, conducting trade testing, and certification in Vocational Training. Working and Administration of it is, along

with Implementing of Vocational Training Programmes, governed by the State Directorate of Technical Education and Industrial Training. Two major training schemes of DGE&T are the Craftsmen Training Scheme and the Apprenticeship Training Scheme which are pre-employment schemes.

Craftsmen Training Scheme

- The objectives here are to raise the quality and quantity of industrial production by systematic training of potential workers and to reduce unemployment among educated youth by equipping them with the necessary skills for suitable employment.
- Since February 1, 2006 training has been conducted in 107 trades: 57 engineering, and 50 non-engineering.
- About 70% of the training period is allotted to practical training and the rest to subjects relating to Trade Theory, Workshop Calculation & Science, Engineering Drawing & Social Studies.

Apprenticeship Training Scheme

The Apprenticeship Training Scheme falls under the Apprentices Act of 1961. The Central Apprenticeship Council advises the Government on policies, norms, and standards in respect to the apprenticeship-training scheme. The National Council of Vocational Training (NCVT) conducts the All India Trade Tests (AITTs) twice a year and awards a National Apprenticeship Certificate which is recognized for employment in Government/Semi Government establishments. There is graduate training (in 103 subject fields) and technicians/(vocational) apprentices (in 95 subject fields).

Vocational Education in India

The National Policy of Education (1968, 1986) in India re-emphasized work education in schools, introducing Work Education from classes I to VIII, pre-vocational education in classes IX and X, and vocational education as a distinct stream in classes XI and XII. The vocational education scheme at the 10 + 2 stage came into existence in the late 1970s. The policy document on Vocationalisation of Secondary Education (1976) is a landmark in the history of vocational education in India: "The introduction of a systematic, well-planned, and rigorously implemented programme of vocational education is crucial in the proposed educational re-organization...vocational education will be a distinct stream intended to prepare students for vocations spanning several areas of activity." In February 1988, the National Working Group on Vocationalsation of Education reviewed the Vocational Education Programme (VEP) extensively and developed guidelines for the expansion of the programme which led to the initiation of the Centrally Sponsored Scheme on Vocationalisation of Secondary Education.

– In the formal sector, state governments implement the scheme at the +2 stage, i.e. after 10 years of schooling, through approximately 9,583 schools (MHRD, Annual report, 2006-07).
– More than 150 courses are offered in six major disciplines: agriculture, business and commerce, engineering and technology, health and paramedical services, home science, and humanities.
– The course structure recommended at the national level includes 70% of the instruction time to be devoted to the chosen vocation, and 30% to be divided between language and a basic foundation course.
– A total of 168 NGOs have been financially assisted since the initiation of the scheme for taking up these projects which help rural unemployed youth and school dropouts.

Objectives of the Centrally Sponsored Scheme (CSS) of Vocationalisation of Secondary Education

– To enhance individual employability
– To reduce the mismatch between demand and supply of skilled human resource
– To provide an alternative to those pursuing higher education without particular interest or purpose

Some issues needing addressing from the last scheme:
– Courses were of fixed duration – 2 years.
– Courses often not need-based.
– Poor linkage to industry.
– Poor vertical mobility.

Why Reforms?

– Changes in technology and financial markets.
– Emergence of global economies, products, and services.
– Growing international competition.
– New forms of business and management practices.

If India wants to give its work force a competitive advantage, it needs to restructure its Vocational Education and Training System.

Challenges for TVET

The foremost challenge is to integrate academic education, vocational education, vocational training, technical education and training in such a way that there is smooth entry/re-entry from one to another. Furthermore, the employment needs of educated unemployed youth, school drop-outs, neo-literates, educated but unskilled persons, skilled artisans who are not formally educated, persons with special needs, and persons who are socially disadvantaged, need to be taken into account.

The Reforms

On the recommendations of the Task Forces and Committees (set up by the Planning Commission of India to contribute towards formulation of XI Five Year Plan), a number of reforms are in the process of being introduced. Some of them include:

1. A Focus Group on Work and Education
   On the recommendation of the NCF, a Focus group on Work and Education was established in 2005 which proposed that work-centred pedagogy be a central organizing theme for reconstruction of the present education system from the pre-school stage up to Class XII
2. The National Knowledge Commission (NKC)
   NKC's recommendations focus on increasing the flexibility of vocational edu-cation and training (VET) within the mainstream educational system
3. Public Private Partnerships (PPP)
   Strong Public Private Partnerships (PPP) are also being advocated in order to enhance training options available for the unorganized and informal sectors. This will be critical for enhancing the productivity of the bulk of our working population.
4. Task Force on Skill development (2007)
   This emphasizes a supply-to-demand driven policy. It states that a distinction needs to be drawn between Vocational Education (VE) and Vocational Train-ing (VT), which would help eliminate prevailing policy overlap.

Cross Sectoral Qualifications Linkages

School Sector	VTE-School	VET-ITI	VET-Polytechnics	Higher Education
Certificate of Senior Secondary Education	Certificate II Certificate I	Trade Certificate II Trade Certificate I	Advanced Diploma*** Diploma** Certificate II Certificate I	Doctorate M. Phil. Masters Bachelor Hons Advanced Diploma Diploma
Certificate of Secondary Education		Bridge Course Certificate in Craftsman Training		

* First 2 years of present polytechnic Diploma; ** Third year of present polytechnic Diploma;

*** Present polytechnic Diploma where entry is after Class XII

In 2007, the Prime Minister announced in his Independence Day Address that India will soon launch a mission on VE and skill development through which 1,600 new ITIs and polytechnics, 10,000 new vocational schools, and 50,000 new skill development centres will be opened. India will ensure that 100 lakh students get vocational training annually.

The National Qualification Framework of India (2007)

The NQF proposes various qualifications, from the secondary level to the Ph.D. level, interweaving academic education, vocational education, and skill training, all to be linked for vertical mobility. As a framework, it contains 14 qualifications to provide vertical mobility, multiple entry, and multiple exit. It is competence based, modular, and offers flexible courses covering both the organized and un-organized sector. The main provisions under this framework are:

- It is market driven.
- Courses are modular.
- Each module will lead to a certificate of attainment.
- Provision of recognition of prior learning.
- Flexibility in delivery mode and training design.
- Diversity in the range of courses and training options.

It includes the following key features of Indian Qualifications Framework:

- closer integration of learning and work.
- Rationalizes school, industry, vocational and academic qualifications into a single system of 14 qualifications.
- Encourages a continuous up-grade of knowledge.
- Supports flexible education pathways between sectors and across qualifications.
- Parity of esteem between academic and vocational qualifications.
- Provides credibility to education and training.

Proposed Reforms in New VE Scheme

Objectives

- Enhance employability of youth through competency-based modular vocational courses
- Maintain competitiveness of youth through provisions of multi-entry/multi-exit learning opportunities
- Provide vertical mobility/ interchangeability of qualifications

Recommendations for National Qualification Systems

- Standards in skills/competencies
- Recognition of prior learning/credit accumulation
- Joint Certification
- Exchange
- Officials
- Trainers/Teachers
- Learner
- Documentation of Best Practices/ Innovations

(2) European Qualifications Framework (EQF) and European Credit System for Vocational Education and Training (ECVET)

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Background: The Lisbon Process

Uncertainties in global economic development cause a corresponding change in work organization, division of labour, as well as in the demand for skills. The concept of Lifelong Learning – including VET – is one of the policy mechanisms for establishing a knowledge based society and for creating global competitiveness. Lifelong learning enables individuals to adapt their qualifications continuously to the needs of the labour markets. It also supports the immediate transition of all individuals into the labour market.

The European Quality Framework (EQF) is an instrument for translating individual qualification levels for comparing qualifications, and it is a neutral reference point based on learning outcomes. It comprises various levels that cover both vocational training and university-level training:

- An orientation towards learning outcomes.
- Descriptions of learning outcomes in terms of knowledge, skills, and competences.
- Inclusion of informally acquired competences.
- Knowledge:
  "a body of facts, principles, theories and practices that is related to a field of work or study"
- Skills:
  "the ability to apply knowledge and use know-how on complete tasks and solve problems".
- Competence:
  "the proven ability to use knowledge, skills and personal, social and/or methodological abilities".

The EQF represents a reference system for recognised qualifications and qualification frameworks. It has been developed in cooperation with member states. It is not a mechanism for recognising what individuals have learned. Quality is assured by the practices of national authorities when linking an NQF with the EQF. The NQF is a reference system for recognised qualifications and learning outcomes that fall outside of these qualifications. It has to be developed by national authorities, and regional and sectorial bodies. It represents an instrument

for recognising what an individual has learned. Quality is assured by national authorities and institutions.

Relevant instruments are:
- ECVET (European Credit-Transfer System for VET)
- ECTS (European Credit and Accumulation System for HE)
- Europass
- European Quality Charta for Mobility (EQCM)
- European Principles for the identification and validation of formal and informal learning
- EQF

EQF and ECVET are taking shape together, as they focus on learning outcomes (KSC). They are based upon qualification processes, adapting the demands of lifelong learning and different learning contexts, and will be geared to the greater mobil-ity of people.

Credit Transfer and Accumulation System

This aims to create an integrated credit transfer system at the European level, meeting the needs of vocational and academic institutions:

ECVET is a voluntary framework to describe units of learning outcomes, namely "a set of skills, knowledge, and competences which constitute a part of a qualification". In this context, a unit is the smallest part of a qualification which can be assessed, validated, and recognised. Each unit is associated with a certain number of credit points. Thus, ECVET is a tool for comparing, assessing, and recognising (providers), as well as for transferring and accumulating (individuals) learning outcomes acquired in different learning contexts. These may be non-formal, informal, formal, or abroad.

Key challenges are:
- Establishing permeability within the qualification system,
- Understanding the terminology,
- Developing the right methodology.

(3) Innovation Network South East Asia for TVET and Sustainable Development

Joachim Wagner
InWEnt, Senior Consultant

Background and Capacity-Building Needs

The "Initiative for ASEAN Integration" (IAI), founded by ASEAN in 2004, aims to support the ASEAN region as a whole, in particular new ASEAN member countries (such as Lao PDR and Vietnam), to overcome development gaps and disparities. The free flow of commodities, services, investment, and qualified workforces belong to the intended creation of an ASEAN Economic Community (AEC). Against the back-ground of growing populations and socially imbalanced economic developments there exists an insufficiently qualified workforce. This is one of the bottlenecks to overcome in regional development disparity. Existing TVET systems in the ASEAN region have developed from very different traditions and have evolved in very differ-ent ways from country to country.

The qualifications that result are often not transparent and can hardly be compared. This limits the regional mobility of work forces and is unfavourable for regional economic development. There exists a deficit of conceptual and planning capacities, and the required competences for the necessary development of National Qualification Frameworks (NQF). These are the preconditions for the development of a nationally-overarching (or even regional) labour market.

Project Development Objective

The project development objective is a "Strengthening of the "Initiative for ASEAN Integration (IAI) by Capacity Building' of the participating partners regarding conceptual and planning competences of Qualification Frameworks". The immediate objective consists of training specialists and management staff with respect to:

- Implementation of TVET innovations and reforms, which are oriented toward the demand of the private sector and the labour market.
- Improvement of NQFs horizontal and vertical transparency through the development/ adaptation of occupational and/or skills and/or competency standards.
- ASEAN nations overarching comparability of qualifications
- Regional exchange of experiences, policy dialogues, and an initialization of regional development processes and partnerships
- Support the IAI process with regards to transparency of qualification, certification and

comparability; transferability/recognition of competencies and qualifications between the participating countries.

Main Interventions

Main interventions aim at establishment/support of existing national TVET policy making bodies and consultation groups involved in the development of NQF's in general, and in the development and implementation of standards in particular. This includes the establishment/support of existing national TVET working groups that are involved in the development of standards and/or in standard setting procedures, adaptation and implementation. Participating countries are Indonesia, Lao PDR, and Vietnam. Ultimate beneficiaries focus on the work force in participating countries, whereas direct beneficiaries and mediators will be TVET experts, researchers and management staff from government, the private sector, business associations, and trade unions.

Status/Progress Made on the Project

Indonesia: Adaptation of national (BNSP) competency standards to meet the labour market requirements in East Java

Laos: Reactivating national Trade Working Groups responsible for the development of occupational standards in priority sectors of the economy – close collaboration with GTZ HRDME-K2 project, especially component K2.

Vietnam: Development of an integrated strategic action plan between GTZ and InWEnt.

(4) Contributions of Technical and Vocational Education and Training (TVET) to Private-Sector Development: Approaches of German Development Cooperation in Asia

Christian Widmann
Senior Project Manager, KfW

TVET and Private-Sector Development
- Challenges for dynamically developing economies in Asia
- Dual Training approach and SME promotion in Germany
- Sustainable Economic Development as a Focal Area of German Development Cooperation with partner countries in Asia
- Multi-stakeholder approach

Challenges and Opportunities for Asia
The internal challenges and opportunities include unemployment and poverty, economic growth and financial/ fiscal stability, as well as the impact of decentralization. External challenges and opportunities (globalization) include world markets (demands, standards etc.), technological development, international competition, and global/ region-specific recession.

Looking at TVET and SME Promotion in Germany, some characteristics may be noted:
- Historic development of Dual Training
- Challenges and the need for adaptation
- SMEs as the backbone of the German economy
- A qualified labour force as a key factor of Germany's international competitiveness
- Public-private partnership in TVET
- Corporate Social Responsibility

With regard to Sustainable Economic Development, the Federal Ministry for Economic Cooperation and Development (BMZ) focuses on some 60 partner countries worldwide – with up to three Focal Areas per country. One (out of ten defined) Focal Areas is Sustainable Economic Development (SED) which includes private sector development and TVET. In most Asian partner countries, SED is a focal area. Following a multi-stakeholder approach, TVET programmes supported by the German Development Cooperation (DC) often deal with several

partners (e.g., Ministry/Department of Education/Labour/ Industry; national TVET authority; certification bodies; industry associations/ chambers) to ensure a systematic and comprehensive approach.

Such complex programmes require various levels/fields of intervention. Various German DC implementing agencies complement each other.

German DC Implementing Agencies
- GTZ – Technical Cooperation*
- KfW – Financial Cooperation*
  *(as agreed in bilateral DC negotiations)
- InWEnt – capacity building
- CIM, DED, SES – individual experts (upon request)
- DEG/KfW – private investment financing/PPP
- SEQUA – partnership programmes
- Political Foundations (e.g. Hanns Seidel Foundation)

TVET Promotion in Indonesia

The post-tsunami rehabilitation of TVET schools in Aceh and Nias is being supported by the Ministry of National Education (MoNE, Province/ District administration) as well as KfW, GTZ, InWEnt, DED, and CIM. There are Indonesian-German Institutes (IGI) in various provinces, organized as teaching factories and/ or competence centers. Collaborating partners are MoNE, the Ministry of Industry (MoI), the Ministry of Manpower and Transmigration (MoMT), as well as KfW, GTZ, InWEnt, and DED. The upcoming TVET programme focuses on TVET school upgrading (following IGI approach), labour-market information system and certification – involving MoNE, MoI, MoMT, and possibly the certification bodies KfW, GTZ and N.N. (to be determined).

TVET Promotion in Vietnam

TVET Programme BBPV is run by the Ministry of Labour-Invalids and Social Affairs (MoLISA), the Ministry of Education and Training (MoET), GTZ, DED, CIM, and InWEnt. The financial cooperation through KfW started in 2004 to complement BBPV. It supplies equipment for two teacher training institutes and eight vocational training centres (incl. consultancy and training measures).

TVET Promotion in Laos

GTZ started to promote TVET in Laos in 1993. In 2004 various GTZ-supported measures became components of a comprehensive TVET programme. Also in 2004, KfW began the implementation of Financial Cooperation measures (Phase I and II) to complement GTZ's activities. So far, DED is involved with 15 experts in formal and non-formal TVET. Beyond this,

there is a capacity building programme of InWEnt. Partners are the Ministry of Education (Department of Technical and Vocational Education; Department of Non-Formal Education), and the National Training Council.

Summary and Conclusion

- Properly qualifying a labour force means meeting the demand of the private sector adequately,
- TVET and private sector development can – and even should – complement each other
- Programmes supported by German DC often use a multi-stakeholder approach on both sides (the partner country and German implementing agencies),
- Complex implementing structures should not slow down the implementation but rather create win-win situations.

(5) Creating a HRD-Train the Trainer Network for West China – An Example for a Capacity-Building Approach

Dr. Eberhard Trowe
InWEnt

The Goal of the HRD-Train the Trainer Network is to support Western Chinese Companies in their efforts to improve HRM, and to offer practically-oriented training for HR-managers that is based on a network of trained teachers. In Germany, InWEnt has about 250 trained students as multipliers, and about 800 trained specialists.

Developing the Programme

First, InWEnt carried out a comprehensive study in order to assess the general economic situation in western China, as well as the labour and business market situation there. Second, target groups were identified. Third, a modular training approach was then designed. The modular training system consists of 12 modules. It is not a static, but rather a dynamic and demand-oriented system, which offers effective teaching material.

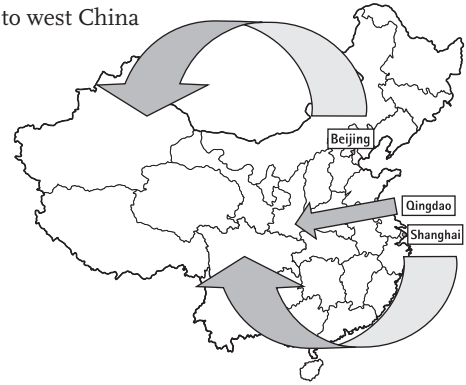
The Modular Training System for Companies in Western China:

Module 1 Labour-market analysis at the regional level
Module 2 Personnel planning
Module 3 Personnel recruiting and personnel selection
Module 4 Testing and matching to the workplace
Module 5 Intercultural management
Module 6 Personal administration
Module 7 Identification of training needs
Module 8 Design and implementation of training and development programmes
Module 9 Career planning –HR development
Module 10 Personal leadership
Modul 11 Vocational Training and competence development
Modul 12 Quality assurance/evaluation for in-plant training measures

The modules are documented in a systematic module handbook on Human Resource Management, InWEnt PRC. It explains the structure of modules, and contains examples and application forms.

The implementation of the network aims at capacity building for partner institutions, implementation of modules, and database to find teachers. Institutional partners of the HRD trainer network are: (a) the Shanghai Institute of TVET, which is a regional Institute with a strong political influence on the TVET-System, (b) the Beijing Institute of Economics and Management, which effects a strong influence on the economic system and is responsible for leadership training in companies at the 1st level, and the Qingdao Senior Experts Association, under the administration of the Department of Organisation of CCP Qingdao.

Knowledge transfer from east to west China



The general setting of personnel development programmes involves three key areas:

Social, Economic, and Technological Conditions

Social conditions include the educational structure of the population, social responsibility, team work and participation, and the pattern of life and work.

Economic conditions include the global economic situation, labour productivity, labour market development, and the availability of resources

Technological conditions comprise the speed of technological development and techniques, changes in production and processes, role of research and development, and the effects of information and communication technologies.

The target groups are:

– Managers of companies: professionalize HR-issues
– Schools and education staff: How to analyse the labour-market
– Provincial governmental officials: international examples and experience

The information knowledge supply system includes three parts:
Part 1 – development of HR-knowledge
Part 2 – e-learning platform on GC21 (www.gc22.com)
Part 3 – experts learning database

The final assessment evaluates the resources of each partner and the quality of the seminars, as well as continuous change and improvement in cooperation between the members.

(6) In-Company Personnel Development

Frank Killius
Personnel Development and Training, Germany

"Matching the Person to Work" deals with the selection of personnel and "Appraisal Systems". So-called "avenues to success" are "initial, further and post-experience training" that form the basis of a career which can be built upon by keeping knowledge use up-to-date.

In examining the practice, we find HR-development through:
- formal training
- coaching
- counseling/career planning
- rotation

Determining personnel needs means to clarify, first of all, the nature of the job to be filled, and, secondly, the qualifications necessary to fill it. Here, on the one hand, job descriptions could be of help, and on the other, an analysis of differentiated appraisals. "Selection refers to the process employed by organizations to identify and assess individuals and place them in jobs." The whole process – from applications, interviews, testing candidates, pooling information until hiring decisions – costs time and money. However many a company deems it more economical to hire and fire personnel according to a companies' requirements when compared to the "enduring expenses" following the establishment of an in-company HRD-system covering the development of employees skills and abilities. In such cases it will depend on the "net results" in view of the employees abilities to meet organizational needs for job performance. Nevertheless one has to check whether such a procedure will stand the test of time. So, perhaps, in the long run, the factors influencing that kind of calculation may change, and taking a retrospective look back could prove that the hire and fire concept has been based on a hopelessly naive miscalculation.

In this context it will be important to know, where the majority of employees work:
- How many people work either in the public or in the private service sectors?
- How many people work in the manufacturing industries (e.g. food, metal production, mechanical/electrical/electronic/computer engineering)?
- How big are the largest companies?
- How successful do small and medium size companies operate?

Working this out in more detail means to check, for example, where skilled workers or skilled management staff is in demand, and where the prospects are particularly good, or bad.

Any of those responsible in the field of HRD, any advisor in the fields of initial advanced technical and vocational training should have a well-founded answer, at least a reasonable idea, about the respective problems, and about how he could the necessary information in special cases.

It would be advantageous if one knows about the number of vacancies in certain branches, and, moreover, of the vocational demands of certain occupations that one should be familiar with.

A prerequisite for knowing the correct developmental goals is going through a developmental system. Here information on personnel, structures, and processes has to be provided. Insights based on behavioural experiences and expectations are decisive to make the company, as a socio-technical system, more efficient and more flexible, and thereby more responsive to adaptation and innovation. Here, the individual has to be accorded a central position. Employee attitudes and patterns of behaviour are important elements if the whole system is to be developed along suitable, parallel lines.

Career Planning

Career planning, or career paths, designate the "normal" line an employee may take in moving from one job to another (Job Rotation). In designing a career plan it has to be decided:

- Where is the individual eventually going?
- What openings are revealed, perhaps, by a succession plan?
- Where lie his/her interests and aspirations?

In each case, it must be determined what additional experience and learning will be needed, and how it may be provided.

Aims of Vocational Training and Further Education

Vocational training of apprentices and the in-company further education of adults aim to give an employee the best possible qualifications. In general,

- qualifications have to be kept up, improved, and must be adapted to economic, technical, or social progress
- employees should be prepared for organizational alterations
- specific knowledge and skills up to an advanced level have to be imparted
- the abilities of foremen, supervisors, and prospective managers should be developed

Apprentices are required to follow a syllabus, taking into consideration practical experience and theoretical knowledge, in order to enable them to learn step by step the basics of their profession. In contrast to the apprentice, the experienced adult knows, on the one hand, a lot about his job. On the other hand he may actually lack information about some urgently needed new techniques and should receive special joboriented instruction. Here, above all, we assume that either appropriate training contributes considerably to the achievement of the overall goals of the company, or it is dispensable. Hence, as has been admitted, training cannot be an end in itself, but should be a management tool.

The procedure of investigation should follow a guideline of continuous inquiry:
– What has to be done with regard to the company's policy?
(Board of Directors / Executives according to hierarchy)
– Which operational requirements exist in detail?
(Experts / Staff Managers)
– Which qualifications – skills and abilities – are already present?
(Individuals / Special target groups)
– What do workers and employees expect?
(Workers / Employees)
– What are the operational priorities?
(e.g. especially authorised training committees)
– What has to be considered in view of personnel policy?
(Personnel Department)

At the outset, those investigative inputs requiring measures different from training have to be separated out. In considering both the inputs of investigation and the inputs of personnel planning, reference is made especially to:
– manpower requirements
– recruitment and selection
– staffing and labour allocation,
and middle-/long-range planning of personnel development
– the coverage of the training demand has to be planned:
– coordination and balancing of the specific training need
(periodically/ locally/ quantitatively/ qualitatively)
– order of priorities (target groups/individuals)

TVET for Apprentices

In the Federal Republic of Germany, vocational training for apprentices is governed by certain rules of training legislation. This legislation is fundamental to the so-called „dual systeming," for coordination and harmonization between private companies and public vocational schools. Of course, in different countries the general circumstances are different. But, despite that, one or the other alterations in Germany may possibly serve as an (external) indicator for a specific company-oriented investigation.

To give an example:
Transform the skilled steel worker into the specific fields of
– blast furnace
– steel works
– rolling mill

into a skilled process mechanic in the fields of
- metallurgy
- metal forming

and new contents such as
- data processing
- maintenance
- testing of materials
- process/production control
- cutting by machines (turning/milling)

Second Example:
Transform the skilled fitter into a mechanic in industry in the fields of
- machinery technique
- system engineering

and new contents such as
- cutting site to electrical systems
- control technique (CNC)
- hydraulics
- arc welding

Third Example:
Transform the energy plant electrician into an energy electrician in the fields of
- plant electronics
- domestic engineering

with new contents such as
- electrical energy technique
- digital technique
- electronics (storage programmable control/chips)

The general reason for changing basic professions may be put, once again, into a simple formula: coping with increasingly complex tasks. In contrast to young workers – such as apprentices in Germany – experienced workers do not need to learn a basic profession anew. In most cases they will require selective treatment. Subsequent progress is dependent on various initial abilities and qualifications. Of prime importance will be whether or not an assumed potential of learning is really on-hand. Moreover, learning costs time – and time is money. Thus, training periods have to be limited in accordance with the capability of individuals to be trained.

(7) HRD Experiences in Hotels and the Tourism Sector in Sri Lanka

Wasula Wijegunawardane
Director of Human Resources
Hilton Colombo Residence

The Sri Lanka Institute of Tourism & Hotel Management (SLITHM) has its main school in Colombo. There are branches in several parts of the country such as Kandy (Central Province), Anuradhapura (North Central Province), Koggala (Southern Province), and Bandarawela (Up Country). Only certificate level courses are offered in provincial hotel schools, while all courses are available in the main Hotel School in Colombo.

There are several Tourism Educational Programmes offered by Universities in Sri Lanka. There is the Sabaragamuwa University of Sri Lanka with a three year education and degree in tourism. The Rajarata University of Sri Lanka also offers this. Here, students can take "Tourism" as a subject in the area of arts subjects. The following courses are offered:

- Food Preparation
- Front Office Tour Guiding
- Housekeeping
- Food & Beverage Service
- Pastry & Bakery
- Travel Operations
- Tour Operations.

As this certificate opens up to them a path leading to the National Diploma, Higher Diploma, or the degree level qualifications, the candidates will be able to plan their career path with confidence. Their skill/ability could be tested and confirmed at their own workplace or in a training session.

Elevator Programme

Hilton International introduced a management development programme named "Elevator" in 1998. This programme will create a General Manager in ten years. It consists of nine competencies:

1. People Management
2. Influence
3. Communication
4. Developing Relationships

5. Planning
6. Analyzing Information
7. Decision Making
8. Commercial Awareness
9. Resilience

The key elements of the Elevator programme are:

- Two placements in different hotels and countries. A tailored programme in specific job roles across six functions of formal training
- Two major business-driven projects
- A personal mentor to support Elevators
- Regular review of performance and feedback
- A final performance and career development review to discuss first job
- Continued emphasis on future development beyond the training

The first batch of Elevator trainees were selected in the year 1998. Among them, one Sri Lankan was selected who started his Elevator training in Melbourne Hilton in Australia as the first part of his training. His second part was completed in the Singapore Hilton. After the successful completion of the programme, and after serving in senior management positions in three international hotels in three countries, he was appointed as the General Manager for the Hilton Colombo Residence in Sri Lanka, being the first Elevator Trainee to become a General Manager within a 10-year period.

(8) The Structure of Technical and Vocational Education in Romania

Liviana Marinescu

As part of the pre-university education in Romania, where a recent change now means the extension of compulsory education to ten years, the technical and vocational education is organized on three education levels:

– lower-secondary education (the last two study years of the level ISCED2, part of the compulsory education)
– upper-secondary education (ISCED 3)
– post-high school education (ISCED 4).

The technical and vocational education is organized into two education routes:

– the high school technologic route, consisting of the lower cycle (2 study years) and the upper cycle (2 study years) of high school
– the progressive professionalizing route, consisting of the trades and arts school (2 study years), the completion year (1 study year), and the upper cycle of high school (2 study years).

The Arts and Trades Schools (SAM) is the name of the new educational level now included in the compulsory education, which – from the point of view of the vocational qualification – replaces the apprenticeship school and the vocational school for which schooling had been organized until the 2002-2003 school season. From the point of view of the qualification levels adopted in Romania, according to the European Council Decision 85-368-EEC, the pre-university technical and vocational education assures that the first 3 qualification levels are as follows:

– qualification level I through the arts and trades school;
– qualification level II through the completion year;
– qualification level III through the upper high school cycle – technologic route and through post-high school education.

European Arguments for Modernization of TVET

The technical and vocational education and training system proposed in Romania redefines the qualifications according to the defining systems of qualifications in different EU member states. The main arguments are:

– assuring equal chances for education and training, as well as consolidation of basic competences for all (LLL Memorandum);
– assurance of qualifications transparency for mobility on the European labour market;
– training flexibility, through narrow qualifications delay, and assurance of social competence for 47 qualifications;
– assurance of chances to continue education through secondary upper education, through professionalizing routes with free access, without any differences, offers opportunities contributing to future increase of students' inclusion in upper secondary education;
– assurance of occupation mobility, by introducing a national qualifications system, common to initial and continuing training. Also, training consolidation through modularized curriculum (training modules), associated with transferable credits.

The Ministry of Education and Research appreciate that the following elements are essential as topics of the coordination mechanisms:
– anticipation (which kinds of activities and mechanisms are in place to monitor the needs for education and training, taking into account the interrelationships of working life and the various changes in society?)
– interest organization (how are the various actors organized to bring their interests into the coordination process?)
– qualifications and credentials (how is the signaling structure organized, and to which extent does it respond to the needs of the various actors?)
– knowledge base (to what extent is a system of knowledge production developed which produces an interrelated knowledge base for the main dimensions of coordination?)
– management of system structure (to what extent do activities and mechanisms exist for systemic management, to bring in line the various sectors of the education and training system?)
– education and training pathways (how are the courses and programmers structured and linked to each other to provide opportunities for access and exit points? To what extent is mobility and flexibility allowed for?)
– curriculum matching (how are the goals for TVET programmes set, worked out, and implemented, taking into account feedback on changing and conflicting needs?)
– co-production of skills (which arrangements are in place for the co-production of skills by actors and/or organizations external to TVET? To what extent are those arrangements systematically used, e.g. different kinds of work-based learning, interchange with HRD activities?)
– apprenticeship as an institution (are the elements of apprenticeship – as a systematic institutional form of holistic learning in a practical context, in contact with a master – prevalent and/or developed?)
– internal quality management (how are the activities within the TVET organizations linked to the outcomes and improvement of processes?)

- professional development (to what extent are the people working within TVET supported to allow then to fulfil their tasks and responsibilities in a sustainable way?)
- financing mechanisms (how do the financing mechanisms take into account incentives for the various actors involved?)
- coordination outcomes assessment (how is the information about the outcomes of coordination generated and used, e.g. labour market information?)
- information and guidance (which activities and mechanisms are in place to provide information and guidance to students and parents? How widespread is the access to information and guidance provision?)
- transition (how effective are the transition processes from VET into working life? How are they managed through the education and training system? Is there a specific emphasis on policy to evaluate and improve transition?)

Workshops – Design and Results

In order to customize the knowledge, challenges, and diverse aspects of the keynote presentations, four topics were identified as being crucial to further development. Thus, the participants of the conference came together into four workshops and elaborated the next steps and issues to be considered.

Each workshop follows a similar setup in order to be able to compare results. This workshop design comprises four aspects:

- The needs: what are the opportunities and challenges for a capacity building project to develop an RQF (Regional Qualification Framework)?
- Rationale: here is a rationale for a capacity building RQF project. Do you agree with it? Reflect especially on the goals, focus, and approach.
- Stakeholders: who should be involved in the project?
- Evaluation: how will we know if the project is successful?

Workshop 1: Examine New Opportunities and Challenges in the Development of Regional Qualification Frameworks
Input and Moderator: Dr. Harry Stolte

Results:
The purpose of this working group was to examine new opportunities and challenges in the development of Regional Qualification Frameworks (RQF). The rationales of RQFs in Southeast Asian countries are:

- Labour mobility
- Skills recognition within, and across, the nations of the SEA
- Regional competitive advantage
- Follow up actions on the Initiative of Asian Integration
- Transparency of skills standards and employment
- AFTA

There are a number of challenges to be met. As NQFs do not exist in SEA countries, a strong and long-lasting commitment from the participating countries is required, as well as stronger collaboration within, and across, government ministries and other stakeholders in the participating countries. This may include fund raising. A roadmap of the Southeast Asian Skills Qualification Framework should pave the way. The goals of this roadmap are to develop steps and a timeline criteria of Southeast Asian Skills Qualification Framework and to introduce it to the stakeholders of the participating countries. It should also help to obtain the endorsement of the Roadmap developed by representatives from the participating countries.

The roadmap should focus on stakeholder identification, and develop guidelines for ASEAN Skills Qualification Framework Guidelines that concern terminology, blueprint of SQF, taxonomy, steps of activities, socialization, and endorsement.

The steps of the roadmap comprise the following project activities:

- Creating a Taskforce
- Taskforce meetings
- Follow-up on previous initiatives
- Database development on SQF
- Conduct risk assessment
- Form regional SQF working group
- Expert input
- Series Workshops on the development of QF Guidelines
- Outlining the next steps of planning, pilot testing, and implementation
- Socializing the Roadmap of Southeast Asian SQF
- Endorsement from the relevant government ministries of participating coun-tries

A number of initiatives could be establish to promote such activities, such as the ILO endeavours on Regional Qualification Framework, ASEAN initiatives, SEAMEO VOCTECH research Projects on SRA in CLMV countries, and the UNESCO Bangkok initiatives on sharing ideas between Australian and New Zealand experts with their counterparts from SEA countries on RQF.

The project task force should include an ASEAN Secretariat, UNESCO Bangkok, ILO, InWent, SEAMEO VOCTECH, and other individual agencies. This task force should establish a settlement to contribute funding from member countries, appoint personnel involved, design a follow-up-action plan, and endorse the roadmap of Southeast Asian SQF.

Workshop 2: Priorities in Standard Setting and Effective Use of Standards in TVET Development (Innovative Best Practices)

Input and Moderator: Joachim Wagner

Standards of TVET development should focus on both industrial needs and the development of individuals and society. Such criteria should be compared by the relevant stakeholders to eventually define standards for vocational training – especially those which have to be considered by training providers.

Beneficiaries will be workers, in particular when it comes to labour mobility, and employers. Beyond this, the societies in ASEAN regions will benefit in general.

Such standards should be developed by independent bodies, e.g. by NTC (Laos) and BSN (Indonesia), as well as by governmental bodies. In that case development may be delegated to,

and authorized by, the appropriate related ministries, as has been discussed for Vietnam.

To summarize, regional projects that focus on comparing standards, e.g. industrial and service sector standards, should be conducted. As a first step, countries should be selected. Secondly, priority sectors should be identified based on a step-by-step comparison criteria.

To achieve such results, stakeholders should be reviewed in order to establish joint research, surveys, workshops, consultations, and interviews. The stakeholders are:

- national standard setting bodies
- industrial sectors
- MOI, MOE, other related ministries
- trade unions, employers, training-institutions
- assessment bodies
- Initiative of Asian Integration (IAI)
- ILO, UNESCO
- potential donors

Process evaluation should define indicators of achievement, recognize the results of comparison by stakeholders, assess the impact of comparison, and weigh up the potential for future development and/or application.

Workshop 3: Existing Links on Qualification Demands of Industries and Private and Public Training Providers

Input and Moderator: Frank Killius

1. Networking: There should be an occupational advisory committee with members of industry, training institutions, trade unions, and industrial associations in order to address the challenges of poor communications between industry and training institutes.
2. Certificates of students by recognized organizations such as the German Chamber of Commerce (through EKONID?), to address challenges such as the low recognition (i.e. acceptance) of local certificates to improve image and value.
3. Increase of technical expertise and qualifications in order to address poor communication skills (English), and the to reduce the huge shortage of skilled workers

The Approach

A framework of funding is needed to enable a project, such as the PPP project. In practice, the best examples have been SMKs like PICA and ATMI from IGI alliance. They could serve as benchmarks and lighthouses. Focus should be on quality assurance and sustainability.

The Rationale

A pilot project should clarify the following issues that are currently prevailing:

1. Trainers Competency is, in practice, insufficient – focus has been too much on theory
2. Training institutes are not purely vocational institutes
3. Mostly not demand-oriented
4. No international standards
5. Training facilities not developed
6. Processes not in place
7. No independent third-party audit

The Goals

Bridging the gap between industry requirements and training centers (output) – in order to address the mismatch of supply and demand

We are focusing on the following activities:

1. Practically oriented training
2. Aiming toward international Quality Standards
3. Linkages & Networking with employers (industry) and industry associations, as demanded at the national and international levels.
4. Strengthening and upgrading selected SMKs.

Possible Project Scenario:

- expand existing IGI programme of intensive training to selected numbers of SMKs
- import German technical expertise for modular training and capacity building
- extending German Chamber of Craftsmanship's certificate via EKONID to the students

Possible Project Scenario:

- due to limited resources in a PPP project, not all issues can be addressed. Therefore the focus lies on what the project participants could contribute to the project in a meaningful way.

Stakeholders:

- selected SMKs
- MoNE
- German TVET Service providers/Technical experts
- national and international (German) Industry Partners & Associations (EKONID members)
- German Certification body (representing German Chamber of Craftsmanship)

Evaluations / KPIs:

- substantial increase in placement from the selected SMKs
- quality output of training (test, evaluations assessments) increased
- increase in salary (contribution to poverty alleviation)

Workshop 4: Networking to Support Regional HRD Integration: Present Situation and Future Requirements in ASEAN

Input and Moderator: Raimund Schwendner

Topics

The needs for networking (HRD integration) – comparing current demands and future challenges, concerning:

- Countries: Increasing Employability & Mobility
- Companies: getting suitable human resources
- The overall goal to stimulate sustainable development (change) and to exchange workforce

TVET Point of View

Germany: the dual system is under review. Other countries are in transition, every country is reviewing its needs for more networking and learning from other experiences (share best practices).

Rationale

ASEAN countries need to work together to improve their know-how, setting competency standards on many levels within a country. Thus, ASEAN countries need both networking on the national level, as well as an authorized "body" to accept and create mutual understanding of skill standards on which competencies could be built. A team should be established in order to set up standards as well as comparable levels to identify possibilities of workforce exchange.

The workshop group identifies the need for information exchange in order to enhance workforce mobility across countries (supply & demand on workforce across the region) for

- information sharing
- job seeking
- exchange workforce

Thus, the key question is whether there is one standard (Comparable Standard) across ASEAN countries? This should cover the following aspects:

- focus
- basis
- qualification
- competency standards
- approach

At the beginning, SATS could be used as a model, as it provides basic standards for industry (e.g. South Asia Tourism Standard) and international standards for specific competencies, e.g. for tourism development

The following steps are crucial to installing an informal as well as a formal forum

- Parties involved:
  Ministry of Education, Ministry of Labour, Ministry of Industry,
  Chamber of Commerce, National Standardization body
- Develop joint portal for information sharing, training /employability
  job info & career development
- Comparable standard (Comparability)
- Network of institution
  Forum
  Association

– Different ways of networking
  Portal
  Cross programmes
  Employee resourcing
– Value of network structure
  To create transparency concerning standards (QF)
  Harmonize standards
  Dynamic standardization, in order to cope with upcoming challenges and to continuously improve, review, and adapt to emerging new needs
– Function:
  Career & Development
  Training
  Cross exposure
  Network
– Future projections of workforce requirements

Stakeholders

– Countries (ASEAN, ASIA?)
  Thailand
  Vietnam
  Indonesia
  Malaysia
  Cambodia
  Philippines
  Laos
  Brunei Darussalam
  Timor Leste
  India
  Sri Lanka, etc.

– International Bodies:
  InWEnt
  SEAMEO
  GTZ
  Unevoc
  HRD Gateway
  CPSC

– Professional Bodies
  Regional HR Association
  Technical Profession Association
  within & across the country, etc.
– Corporate Sector
– Municipalities
– Training Body

Evaluation

– Short-term: process monitoring & evaluation
  Joint Forum/Networking Establishment
  Vision, Mission Value, Objective, Target, Measurement concerning country involved
  Stakeholders involved
  Functioning of networking
  Feedback mechanism

– Long-term (future requirements)
  Results-oriented
  Reduce workforce shortages among countries
  Increasing workforce mobility
  Reduce unemployment
  Reducing skill shortage
  Technological development
  New way of capacity building
  Fostering the value of evaluation

RECOMMENDATIONS FROM THE CONFERENCE

At the conclusion of the conference, Saiful Omar, SEAMEO VOCTECH, Martin Purpur, InWEnt, and Harry Stolte (InWEnt) provided a summary of the meeting. They outlined the importance of HRD, skill development, and standardization. They also stressed the need for manifold cross-functional partnerships of ASEAN countries and institutions in order to meet future challenges. Such collaboration is crucial to over-coming the global, as well as the regional, risks lying ahead. Thus, the conference organizers underlined their readiness and mutual engagement for further and fruitful collaboration.

Annex I:
The Conference Programme

International Conference
Corporate HRD and Skills Development for Employment: Scope and Strategies

24–26 NOVEMBER, BALI–INDONESIA

MONDAY, 24 November 2008	
08:30 – 09:00	Arrival of Guests, Participants and Speakers, Forward Registration Venue: AYODYA Resort Bali
09:00 – 09:30	**Official Opening** MC: Ms. Early Diah Bintari, Educon Indonesia Presentations / Welcome Addresses – Mrs. Marianne Weinbach, German Embassy, Welcome Address and Opening – Dr. Rupert Maclean, Welcome Address on behalf of UNESCO-UNEVOC – Mr. Saiful Omar, Director, SEAMEO VOCTECH: Emerging Trends, Issues and Challenges in TVET in the Asia Pacific region with special focus on skills standards“ – Dr. Harry Stolte, Head of Division, InWEnt: Capacity Building combined with international Networking: InWEnt’s actual approaches

09:30 – 09:45	**Outline of the Conference:** Mr. Joachim Wagner followed by a Q & A Session
09:45 – 10:15	**Morning Tea/Coffee Break**
10:15 – 12:00	PANEL / KEY NOTE SESSION **Aspects of development of national qualifications** **Chairperson:** Dr. Eberhard Trowe, InWEnt Key note presentations: 20 Minutes each, followed by 10 minutes Q&A **1. SEAMEO VOCTECH: Dr. Paryono** Application of skills standards, testing and certification at training providers level **2. PSSCIVE (NCERT) Bophal: Prof. Poonan Agrawal** Emerging Reforms in Vocational Education in India with focus on Indian Qualifications Framework. 3. **Mr. R. L. Singh** – Director of Training, Ministry of Labour & Employment India
12.00 – 13:30	**Lunch**
13:30 – 15:00 .	Continue key note presentations: **Chairperson:** Dr. Harry Stolte (InWEnt) **5. Federal Institute of Vocational Training, Germany: Mrs. Christiane Eberhardt** European Developments and their Implementation: The European Qualifications Framework (EQF) and the European Credit System for Vocational Education and Training (ECVET) **6. COUNTRY PAPERS:** **6.1 General Department of Vocational Education and Training, Ministry of Labour, Invalids and Social Affairs, Vietnam, Mr. Nguyen Tien Dzung** Policy issues and interventions in establishing skills and/or competency standards in Vietnam
15:00 – 15:30	**Afternoon Tea/Coffee Break**

15:30 – 16:00	Continue key note presentations: **6.2 Dept. of Higher, Technical & Vocational Education, Ministry of Education, Laos, Mr. Kongsy Sengmany** Policy issues and interventions in establishing skills and/or competency standards in Lao PDR
16.00 – 16.30	**7. DISNAKER East Java Province, Indonesia, Mr. Bambang Sutaryo** Establishing skills and/or competency standards in Indonesia – with regional perspectives under the aspect of decentralization: Challenges, Problems and Approaches **8. Mr. Joachim Wagner, InWEnt Project Manager/Senior Consultant** InWEnt's Capacity Building Programme to support the process of skills standards development in the above countries
16:30 – 17:00	Wrap-up of day one (Synthesis) InWEnt consultants
19:30	**Dinner hosted by InWEnt** **Venue: Balinesse Theater, Ayodya Resort Bali**

TUESDAY, 25 November 2008	
08:30 –10:00	PANEL / KEYNOTE SESSION **Aspects of Corporate HRD and Linkages with TVET** **Chairperson:** Dr. Reinhard Klose, InWEnt Key note presentations: 20 Minutes each, followed by 10 minutes Q&A **1. Mr. Christian Widman, KfW Entwicklungsbank:** Private Sector Development and Contributions by Technical Vocational Training: Objectives and Approaches by German Development Cooperation in Indonesia **2. Mr. Bima Hermastho, HRD Indonesia:** Expectations of Small- and Medium-Sized (SME) Towards their Employees as a Means of Improving Vocational Training (System, Institutions, Teacher, Curriculum) **3. Dr. Eberhard Trowe, InWEnt:** Creating a HRD Train the Trainer Network for Western China – an example for a Capacity-Building Approach
10:00 – 10:30	**Morning Tea/Coffee Break**
10:30 – 12:00	Continue key note presentations: **Chairperson:** Mr. Martin Purpur – InWEnt **4. Frank Killius – InWEnt Consultant** In-Company Personnel Development **5. Dr. Reinhard Klose, InWEnt** Promoting sustainable economic development through labour market-oriented technical and vocational education and training and corporate human resource development in Indonesia **6. Mr. Wasula Wijegunarwadene, HRD Manager Hilton:** HRD-Experiences Made: Hotel and Tourism Sector in Sri Lanka
12.00 – 13:30	**Lunch**

13:30 – 14:00	**Plenary: Briefing for Working Groups** Chairperson: Mr. Joachim Wagner
14:00 – 15:00	**Thematic Area I:** (ILO, UNESCO, ASEAN Sec., MONE, DISNAKER, GDVT-MOLISA, MOE Laos, VEDC, SEAMEO VOCTECH, InWEnt, BIBB, OVEC Thailand, UCECOM, others) **Aspects of developing a Regional Qualifications Framework in ASEAN based on Skills Standards** Working Group & Reporting 1: Moderator: Dr. Harry Stolte, InWEnt **Topic: Examine new opportunities and challenges in the development of a RQF** Rapporteur: (to be selected by working group) Working Group & Reporting 2: Moderator: Mr. Joachim Wagner (TVET practitioners involved in standard setting) **Topic: Priorities in standard setting and effective use of standards in TVET-Development (innovative best practices)** Rapporteur : (to be selected by working group) **Thematic Area II: HRD Aspects** (VCCI, HRD Club Indonesia, EKONIID, Garment Training Center, KfW Entwicklungsbank, CII India, Hilton Colombo, TTVC Medan) Working Group & Reporting 3: Moderator: Dr. Frank Kilius **Topic: Existing links on qualification demands of industries and private and public training providers- best practices** Rapporteur: (to be selected by working group) Working Groups & Reporting 4: Moderator: Mr. Reimund Schwendner (TVET practitioners involved in Corporate HRD) **Topic: Networking to support regional HRD integration – present situation and future requirements in ASEAN** Rapporteur : (to be selected by working group)
15:00 – 15:30	**Afternoon Tea/Coffee Break**
15:30 – 17:00	**Continue group work**
18:45	Bus leaves to dinner venue

19:15	**Dinner hosted by InWEnt** **Venue: Ganesha Café, Jimbaran Bay**
Note: As a side event, the Director Generals for Vocational Training from Indonesia, Vietnam, and Lao PDR will have a separate meeting to discuss perspectives and approaches of trilateral cooperation within existing regional framework conditions.	

WEDNESDAY, 26 November 2008	
08.30 – 09:10	**Working Group 1 & 2 Reports:** Moderator: Mr. Joachim Wagner (each 20 Minutes)
09.10 – 10:00	**Working Group 3 & 4 Reports:** Moderator: Mr. Frank Killius (each 20 Minutes)
10.00 – 10.30	**Morning Tea/Coffee Break**
10.30 – 11.30	**Plenary Session** **Chairperson:** Mr. Saiful Omar, SEAMEO VOCTECH (TBC) Moderator's summation Discussion: Where to from here? Summary / Recommendations
11:30 – 12:00	**Official Closing** **Chairperson:** Dr. Harry Stolte, InWEnt (TBC) Speakers – N.N. ASEAN Secretariat – Mr. Saiful Omar, SEAMEO VOCTECH – Mr. Martin Purpur, InWEnt
12.00	**Closing Lunch**
Afternoon	**Sightseeing tour in Bali**
14:30 – 18:30	Tanah Lot, Tabanan
19:30	**Farewell Dinner:** **Venue: Atmosphare Café, at Discovery Mall – Kuta**

Annex II: List of Participants

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InWEnt – Internationale Weiterbildung und Entwicklung gGmbH
Capacity Building International, Germany

InWEnt – Capacity Building International, Germany, stands for the development of human resources and organisations within the framework of development cooperation. InWEnt offers courses that cater to skilled and managerial staff as well as decision makers from business, politics, administrations and civil societies worldwide.

With the education, exchange and dialog programmes for approximately 55,000 persons per year, InWEnt constitutes the largest joint initiative of the German Federal Government, the Länder (German federal states) and the business community. The centre in Bonn and 30 other locations in Germany and abroad employ roughly 850 staff.

The organisation commands a total annual budget of approximately €130 million. The Federal Government is main shareholder and represented by the Federal Ministry for Economic Cooperation and Development (BMZ), which is also the main financial contributor. Approximately 40 percent of the budget is from further commissioning bodies, in particular the Federal Ministry of Education and Research, the Foreign Office (AA), the Federal Ministry of Economics and Technology, and, increasingly, the European Union (EU) as well as various further multilateral organisations. Main cooperation partners are the KfW Bankengruppe (KfW banking group), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation) and private business foundations.

InWEnt was created in 2002 through the merger of Carl Duisberg Gesellschaft e.V. (CDG) and the German Foundation for International Development (DSE). In keeping with the tradition of the predecessor organisations, both Länder (German federal states) and German business are shareholders and thus ensure that InWEnt is firmly anchored in society.

Within its business fields, InWEnt amalgamates the decades of expertise and regional experience contributed by CDG and DSE. The methodological repertoire is structured along broad lines, making it possible to customise modules to fit the specific requirements of customers and tasks and provide appropriate solutions. The employment of new media permits the development and implementation of innovative knowledge management methods, the launching of international virtual learning communities and the promotion of multiplier systems.

UNESCO–UNEVOC International Centre

Our Profile

The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training was established in Bonn, Germany, in September 2000, based on a Host Country Agreement signed earlier that year between UNESCO and the Government of Germany. The Centre was inaugurated on 8 April 2002.

The Centre seeks to help UNESCO's 193 Member States strengthen and upgrade their systems of technical and vocational education and training, and to promote a greater availability of skills development options so as to implement Article 26 of the Universal Declaration of Human Rights and UNESCO norms and standards concerning technical and vocational education and training.

The Centre undertakes its activities through a world-wide network of 280 UNEVOC Centres in 165 countries. It creates synergies with UNESCO Headquarters, UNESCO Institutes/Centres and Field Offices; and works in close partnership with other international and national agencies in the field of technical and vocational education and training.

Our Vision

The UNESCO-UNEVOC International Centre acts as part of the United Nations mandate to promote peace, justice, equity, poverty alleviation, and greater social cohesion. The Centre assists Member States develop policies and practices concerning education for the world of work and skills development for employability and citizenship, to achieve:

- access for all
- high quality, relevant and effective programmes
- learning opportunities throughout life.

The Centre contributes to increased opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development, especially for youth, girls, women and the disadvantaged. Its emphasis is on helping meet the needs of developing countries, countries in transition and those in a post-conflict situation.

Our Work

The UNESCO-UNEVOC International Centre acts as a key component of UNESCO's international programme on technical and vocational education and training. It also works to support UNESCO's mandate for Education for All and Education for Sustainable Development.

The Centre achieves this through taking action to strengthen and upgrade the world-wide UNEVOC Network (Flagship Programme), with particular reference to:

- Stimulating international and regional cooperation concerning human resource development
- Promoting UNESCO normative instruments and standards
- Promoting best and innovative practices in TVET
- Knowledge sharing
- Mobilizing expertise and resources
- Strengthening partnerships with other relevant agencies

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Joint Publications from InWEnt and UNESCO-UNEVOC

1) Frank Bünning/Zhi-Qun Zhao (eds.),
TVET Teacher Education on the Threshold of Internationalisation,
Magdeburg 2006 (available as book or as CD-ROM)

2) Jon Lauglo,
Research for TVET Policy Development,
Magdeburg 2006

3) Frank Bünning/Alison Shilela,
The Bologna Declaration and Emerging Models of TVET Teacher Training in Germany,
Magdeburg 2006

4) Frank Bünning,
Approaches to Action Learning in Technical and Vocational Education and Training (TVET), Magdeburg 2007

5) Alexander Schnarr et al.,
Vocational Education and Training and the Labour Market – A Comparative Analysis of China and Germany, Magdeburg 2008

6) Chana Kasipar, Mac Van Tien et al.,
Linking Vocational Training with the Enterprises –Asian Perspectives,
Magdeburg 2009 (available as book or as CD-ROM)

(7) InWEnt/UNESCO-UNEVOC/SEAMEO VOCTECH (eds.),
Corporate HRD and Skills Development for Employment: Scope and Strategies,
Magdeburg 2009 (available as book or as CD-ROM)

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InWEnt – Qualified to Shape the Future

InWEnt – Capacity Building International, Germany, is a non-profit organisation with worldwide operations dedicated to human resource development, advanced training, and dialogue. Our capacity building programmes are directed at experts and executives from politics, administration, the business community, and civil society.

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60 percent of all our programmes are implemented at the request of the Federal Ministry for Economic Cooperation and Development (BMZ). In addition, we conduct programmes for other German federal ministries and international organisations. We are also working in cooperation with the German business sector in public private partnership projects that can be designed to incorporate economic, social, and environmental goals.

The programmes for people from developing, transition and industrialised countries are tailored to meet the specific needs of our partners. We offer practice-oriented advanced education and training, dialogue sessions, and e-Learning courses. After the training programmes, our participants continue their dialogue with each other and with InWEnt via active alumni networks.
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