

Promoting organic farming by training in bio-fertilizers

National case study – Cyprus

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1. Cyprus national legislative framework and policy in organic farming and eco-friendly technologies

1.1 Agriculture in Cyprus and the position of organic farming

Agriculture has always been a significant sector of the Cypriot economy. However, due to the rapid growth of other sectors of the economic activity, agriculture today contributes to a less extend to the gross domestic product (GDP) and to the employment potential of the country than before. On the other hand, it contributes to maintain a good proportion of the population in rural areas and supplies the local market, including the country's well developed tourist industry, with good quality fresh products. It also satisfies the country's export policy, accounting for over 20 percent of all domestic exports.

The total agricultural area of Cyprus is around 200,000 hectares, of which the utilized agricultural area (UAA) accounts for about 155,920 hectares. Agricultural land is privately owned, and the great majority of farms (over 34 000) are small family holdings with an average size of less than 2 hectares. In 2010, Cyprus was among the EU Member States with the smallest average area per farm. The shortage of water and the instability of rainfall contribute to this peculiarity of Cyprus' agriculture. (EUROSTAT http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural_census_in_Cyprus).

Organic agriculture in Cyprus started in 1988 with two farmers involved in the production of several kinds of vegetables, including potatoes, cereals, and dairy products and meat; all production processing, packaging and labelling in compliance with IFOAM's (<http://www.ifoam.org>) basic standards.

During the 1990s, the area of land under organic management as well as the number of organic farmers gradually increased and new products have been added to the list of organic foodstuffs. From 1993 onward, the production, processing, inspection and certification systems used have been in accordance with Council Regulation (EEC) No. 2092/91. Up to 2000, there has been a substantial increase in organic production. With the adoption of the Rural Development

Plan (2004-2006) of the Ministry of Agriculture, Natural Resources and Environment (<http://www.moa.gov.cy>) for the establishment of subsidization for production of organic products, along with the increasing demand from the consumers for high quality, nutritious and healthy agricultural products, organic farming has been improved considerably.

At present, according to 2014 statistical data, Cyprus has a total area of 3,890 hectares cultivated as organic, a number showing a significant increase compared to 900 hectares in 2004. The land fully converted into organic producing one is 1'640 ha and there are 310 organic producers. However, organic farming represents only 3 % of the total utilized agricultural area in Cyprus, and is one of the three lowest national rankings in the EU-27 (EUROSTAT, 2014). Hence, this provides space and opportunities for improvement of the organic sector in Cyprus.

1.2 Organic farming and the global ecological problems

The agricultural production sector in Europe has been strongly affected by climate change with noticeable effects such as reduction in crop productivity, higher pest and disease pressure, severe soil degradation, and increased risk for food safety and resources sustainability.

Although agriculture accounts only for about 8 % of the greenhouse gas emissions (EUROSTAT, 2012), the global warming potential of nitrous oxide and methane greenhouse gases is 300 and 30 times greater than that of an equal mass of carbon dioxide. That is why EU DG Climate Action A2 Unit activities are focused mainly on them. The extensive use of animal manures in organic farming practices and the preference not to use chemical fertilizers and pesticides will demonstrate the effectiveness of organic farming practices in mitigating nitrous oxide and methane emissions from agricultural systems.

1.3 Organic agriculture organisations, standards, certification, and state regulations

The Cyprus Organic Farmers Association (Syndesmos Viokalliergiton Kyprou) was founded in 2000 and is the first Organic Producers Association created in Cyprus. The aim of the Association is to facilitate its members in the production, processing, standardization, and packaging of the organic products, to confront their common problems, to provide technical and scientific guidance to the organic farmers and promote their products in the market.

Organic agriculture is regulated by the "Biological Production Law 160(J)/2001", which is completely harmonized with the corresponding Legislation of European Union (EEC) 2092/91, (EU) 1804/99 and EC_No_834_2007 of the Council. The law implemented by the Department of Agriculture, Ministry of Agriculture, Natural Resources and Environment (MANRE), a legal body which is also responsible to apply National Regulations on specific issues concerning organic agriculture.

EU-authorized certification bodies or their joint ventures with Cypriot companies certify all those involved in food production (farmers, processors etc.) at present. These are: Lacon (<http://www.laconinstitut.com/frameeng.htm>) (Germany), Dio (Greece) and Skal (<http://www.skal.de>) (the Netherlands), Biocert (Cyprus). The standards and certification applied are identical to those required by Council Regulation (EC_No_834_2007) (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:189:0001:0023:EN:PDF>).

In addition, research on aspects of organic farming is carried out by the Agricultural Research Institute (ARI <http://www.ari.gov.cy>). Studies on biological pest control, the use of alternatives to chemicals in controlling pathogens and on legume rotations have been carried out for decades. Complete organic systems to study grape and potato production were initiated in the late 90s and further developed and expanded. Studies on organic production include as well crops such as olives, aromatic herbs, vegetables and citrus fruit, which are of major interest for Cyprus' agriculture. ARI and other departments of the Ministry of Agriculture, Natural Resources and the Environment are also engaged in conforming the regulations for organic

production and in informing farmers and the public about how the organic system operates and its advantages.

1.4 National agricultural policy in Cyprus – production and placement of organic products in the local market.

In formulating the country's rural development policy, the following issues have been taken into consideration: encouraging diversification and improving infrastructure; maintaining viable communities while preserving their culture and traditions; and increasing the quality of life by preserving the environment.

The Rural Development Plan (RPD) 2007-2013 covered all aspects of the National Agricultural Policy in Cyprus. Following its implementation approximately €325 million were provided in the six year period through various support schemes. The measures of the RDP, related to organic production are, as follows:

- Measure 2.3.7: Development of Organic Product with main objective to encourage the organic Production;
- Measure 1.9: Encouragement of setting up and administrative operation of Producer Groups with main objective to support in monetary terms the setting up and administrative operations of Producers Groups and Unions of Producers Groups;
- Measure 1.10: Meeting standards based on community legislation with main objective to assist farmers to comply with the new and existing community standards.

A plan to place successfully organic products in the Cypriot market has been proposed that attempts to offer more insight into Cypriot organic market. Research has been conducted focused on three levels: consumers, producers and retailers of organic products in order to collect information regarding the production process of organic products, the difficulties in their disposal, the availability and quality of the organic products, their prices and the demand of organic products, as well as consumers' behaviour towards organic versus conventional

products. On the basis of survey results a plan was launched that is divided in four general categories: production, marketing, legislation and other measures,

- At production level:
 - o Maintenance the rate of monetary support provided to farmers;
 - o Encouragements the mastering of know-how and possession of special training capabilities;
 - o Incorporation of agricultural research in the field of organic farming as a continuous and supportive activity;
- At marketing level:
 - o Support for the creation of Producers' organizations;
 - o Establishment of in place mechanisms which can monitor and assess the level of consumer satisfaction and trace the changes in consumer preferences – creation of a consumer observatory for organic products;
 - o Implementation and monitoring the quality standards at local markets;
 - o Promotion the creation of a national brand for organic products;
 - o Organization of special campaigns designed to bring forth organic farming benefits to the society, organic product attributes, and health advantages;
 - o Creation of a specialized organic products market;
 - o Establishment of a Marketing Board for organic products that assist the creation of effective marketing chains and promotes export activities;
- At the level of legislation:
 - o New legislation is required for the creation of a National Brand for organic products.
- Other measures:
 - o Establishment of a national e-portal for organic products to facilitate dissemination of information regarding their properties, to promote organic products trade and their proper disposal;

The National Action Plan for organic agriculture should be in line with the European Action Plan for Organic Food and Farming initiated by the European Commission in 2004. The

national legislation and the institutions created to control the production, processing and trading of organic products are in full compliance with the European legislation.

A draft national plan for adaptation to climate change has been recently developed (June, 2014) by the Cyprus Department of Environment. This national plan describes a set of mitigation and adaptation measures for the major economic sectors, among which environment-soils-agriculture-water-forests, that aim at reduction of the effect of global climate change.

1.5 Organic farming – economic advantages and challenges

Following the EU accession (2004) all trade barriers have been abolished and agricultural products are freely marketed in the local market. In recent years Cyprus agriculture lost some of its competitiveness due to rising labour and input costs, unfavourable weather conditions and stagnating prices in the exports markets. Thus, differentiated products, like the organics, could provide an alternative source of income to those involved in their production and processing. The government of Cyprus places a high priority on organic farming for several reasons: human health and food security, conserving and protecting the environment, exploiting favourable climatic conditions, the preponderance of small farms, the availability of family labour, etc.

A survey was organized by Cyprus Organic Producers Association and performed by European University Cyprus in 2013 aiming at evaluation of the consumer knowledge for Organic Products. The results of this survey outlined the main trends and the future perspectives in organic farming and production. The obtained results indicate that more and more people become informed about the existence of organic products through media or personal contact. The use of Internet as an information medium showed an upward trend. The majority of Cypriots prefers buying local organic products (mostly vegetables, fruits, cereals, eggs and legumes) rather than imported ones. These data indicate some lack of information and awareness about the organic farming and production, a gap that the current Cypriot rural development plan has put into its agenda.

Another important constraint to the development of organic agriculture in Cyprus is the limited existing knowledge and know-how on organic crop growing. A bottleneck issue is as well the marketing, since marketing channels seem not willing or capable to market organic products.

In the above mentioned context efforts are foreseen in the following directions:

- Increasing awareness of organic farming throughout the country;
- Launching of a technology platform that joins the efforts of industry and civil society in determining the organic research priorities and defending them in cooperation with the policy-makers to boost organic farming research
- Revealing the potential of organic food production to mitigate some of the major global problems from climate change and food security, to the whole range of socio-economic challenges in the rural areas.

1.6 Eco-friendly technologies – the eco-innovations in Cyprus

In respect to innovation, Cyprus' performance has improved in the last five years and nowadays the country is classified as a leader among the group of innovation followers, with an innovation performance just above the EU-27 average. (Innovation Union Scoreboard, 2010). However, in eco-innovation performance, the country still remains in the lower part of the chart. Nevertheless, considerable developments towards promotion of green innovations are observed in the country. In parallel the corresponding legislation changes are being developed. Several systems, such as business incubators, grant scheme, etc. are utilized in promoting eco-efficient and environmentally friendly technologies.

Sectors with a leading role in eco-innovation in Cyprus are: the manufacturing of nonmetallic mineral products; the food and beverages manufacturing which uses organic cultivation, bio or environmental certification; the solar energy sector; as well as water saving in irrigation.

Eco-innovation Scoreboard ranking (2013) and eco-innovation index composites for Cyprus are shown in Figs. 1 and 2.

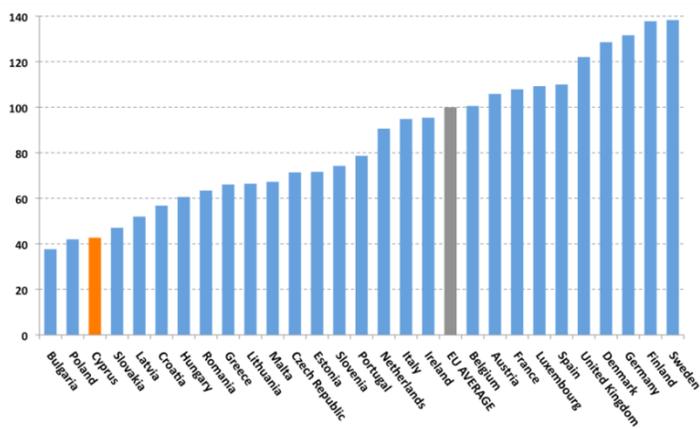


Fig.1. Eco-innovation Scoreboard ranking (2013).

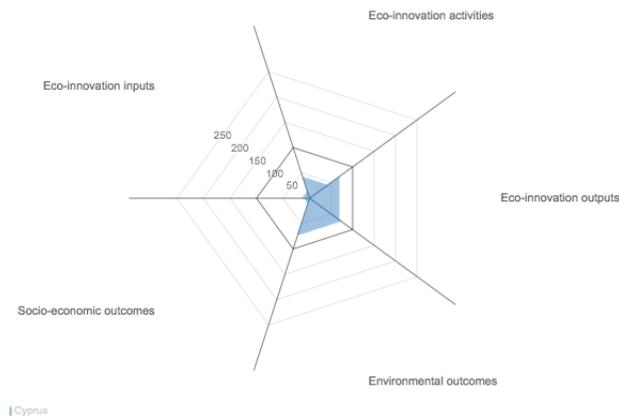


Fig. 2. Eco-innovation index composites (eco-innovation inputs, eco-innovation activities and eco-innovation outputs as well as environmental outcomes and socioeconomic outcomes).

The agricultural and food industries are also contributing to eco-innovative solutions: waste treatment in olive oil production; compost produced from recycled plants; organic and energy efficient production of wine and olive oil etc. There are several good practice examples that emphasize on the potential of organic farming in eco-innovations implementation.

OLEASTRO ENTERPRISES LTD. (<http://www.oleastro.com.cy/>) company is one of them. This company runs a unique to Cyprus olive theme park which includes an organic olive grove, the country's sole 'green' olive mill with HACCP and ISO certifications, an olive oil museum, a traditional coffee shop and an olive oil gift shop. The company produces and trades its own certified organic olive oil. Visitors of the park and museum have the opportunity to compare the extraction methods of the past to the modern process of the ecological olive mil. OLEASTRO won the first prize for innovation in the primary sector at the annual Research and Innovation Awards (2013) organized by the country's Employers Federation (OEV).

2. Current status of training in Cyprus

2.1 Brief overview of agricultural education strategies

Cyprus made the first steps towards sustainable development education with special attention payed to environmental education in the 1990s. It was a slow and difficult beginning lasted over a decade due to the lack of structured educational plan in the educational system of the country. During this time agricultural education presented quite limited in both formal and informal education in comparison with other European countries.

The approaches for integrating the agricultural education into the strategic goals of the country for a better society in a healthier environment have been quite recently adopted by the country policy makers engaged with education. A crucial point in this direction was the decision of all EU member states by 2015 to design and implement National Strategic Action Plans, following the suggestions and general guidelines of the ratified Strategy for Education and Sustainable Development in Europe in 2005. In this connection Cyprus, through Ministry of Agriculture, Rural Development and Environment, prepared a National Rural Development Programme 2007-2013, an ambitious project, which is precisely to revitalize the rural economy and ensuring the short and long-term future of the countryside. The plan placed special emphasis on:

- promotion the expansion and improvement of production;

- modernization of units and creation of sustainable farms;
- improving the quality and food safety;
- protection of the environment and landscape and the quality of life in rural areas;
- development of educational programmes that provide the agricultural sector with graduates who can lead and develop good agricultural practices, evaluate, develop and apply technical skills on new techniques, and run and manage a successful agribusiness company.

The national strategy for the rural development is implemented through three fundamental priority axes. Priority Axis 1: Improving the competitiveness of the Agricultural and forestry sector; MEASURE 1.1: «Vocational training and information actions» foresees educational and training activities as well as better dissemination of the information to all adults active in the fields of agriculture, food industry and forestry.

The type of actions implemented are focused on:

Educational and vocational training. Priority is given to trainees applying to measures of the RDP where mandatory training is foreseen.

Information and diffusion of knowledge in the sectors of agriculture, food industry and forestry, including land management and environment, Natura 2000 requirements, cross compliance, animal welfare, innovative practices and other.

Two categories of training of courses are provided, a general one for "beginners" and young farmers (action a) and an advanced one for farmers requiring specialised training (action b).

Another important problem that the Cypriot agricultural sector has to deal with is the agricultural education level, as well as their age-related structure, since around 48% of the agricultural holdings owners are over the age of 55. The need is therefore acute for the retention of the rural population and especially of the young and educated persons in the countryside and for improvement of the human potential that is engaged in the agricultural sector.

2.2 Formal/non-formal education in bio-fertilizers: available training programmes; responsible organizations; training settings and systems; tendencies and problems

2.2.1 Structure of Cypriot educational system

Fundamental principle in Cypriot educational system is that every person has the right to receive and every person or institution has the right to give education or instruction. The governance of the education is centralized in its majority. The main authorities responsible for education are the Council of Ministers, the Ministry of Education and Culture, the Educational Service Commission and the Local School Boards. The Cypriot educational system covers educational stages from pre-primary to postgraduate levels (Fig. 3).

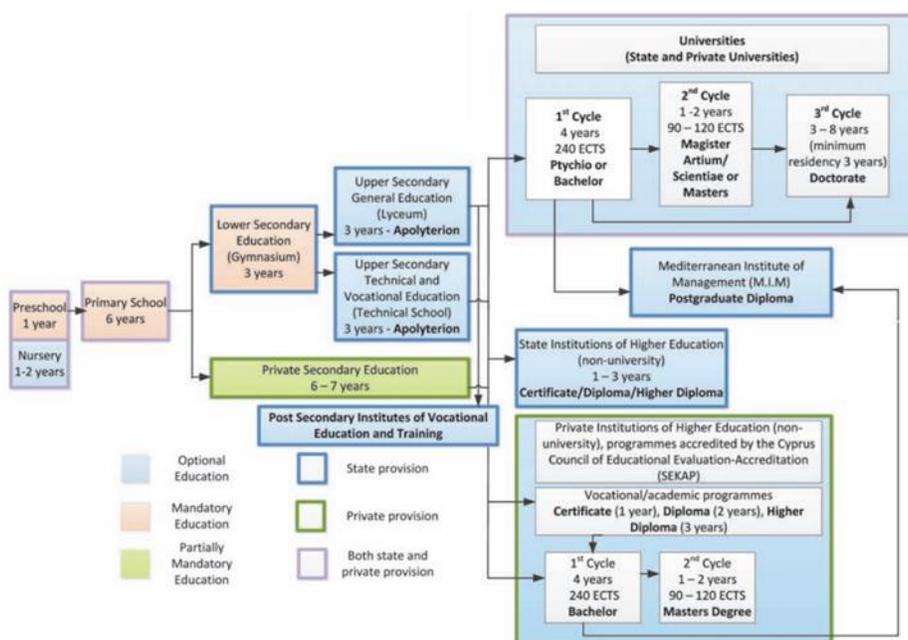


Fig. 3. Structure of the educational system in Cyprus.

2.2.2 Vocational Education and Training (VET) in Cyprus – an overview

Political background

Key players in policy development for education and training in Cyprus are the Planning Bureau (PB), the Ministry of Education and Culture (MoEC), the Ministry of Labour and Social Insurance (MLSI) and the Human Resource Development Authority (HRDA).

The political priorities in the field of VET are focused on:

- implementation of the comprehensive Lifelong Learning Strategy;
- promotion of the education reform at all stages of education;
- continuous upgrading of training and skills to match labor market needs;
- increasing female participation;
- development of a National Qualifications Framework and its implementation;
- operation of the System of Vocational Qualifications.
-

Legal framework

Government-regulated VET provision refers to defined VET qualifications, such as diplomas, degrees, certificates, and to the public or private training pathways leading to them within the education and training system. The House of Representatives of Cyprus executes the legislative power concerning VET provision. Thus, all activities on the provision of VET are legitimized by decisions of the Council of Ministers and/or Acts passed by the House of Representatives.

Financial issues

The financial support of VET is responsibility of:

- the state, comprising federal, regional or local authorities;
- private organizations (enterprises, unions, foundations, educational institutions);
- the individuals, i.e. the participants of VET programmes;
- a combination of the above groups.

Provision of VET

In Cyprus VET is offered at public, semi-government and private institutions. It is organized in several clusters of activities, and is positioned within the education and training system of the country as shown in Fig. 4 below.

Several clusters of VET provision systems can be outlined:

- **CLUSTER: Apprenticeship**

This is a two-year initial VET programme providing practical and theoretical training to young people who had not successfully completed their secondary compulsory education and wished to be trained and employed in technical occupations. This was terminated with the June, 2013 students' graduation and replaced by the New Modern Apprenticeship NMA, which started its operation in 2012-13 school year. NMA educates students 14 and 21 years of age at two apprenticeship levels: **preparatory** and **core**. It is not a part of compulsory education and is free of charge. **Preparatory apprenticeship** does not involve employment; it is an alternative form of education and training for students 14 - 16 years of age. Students who complete preparatory apprenticeship (EQF level 2) may proceed to the core apprenticeship level or may re-enter the formal education system. **Core apprenticeship** lasts three years and involves both training at school and practical training in enterprises. Apprentices are employed. Upon successful completion of the core apprenticeship, graduates receive apprenticeship certificate (ISCED 2, EQF level 3) and may enroll at the post-secondary institutes of VET. The Apprenticeship Board supervises the operation of the apprenticeship system.

- **CLUSTER VET at upper secondary level**

VET at upper secondary level is provided at technical schools for students aged 15-18 and evening technical schools through a broad range of initial training programmes. The formal upper secondary technical and vocational education programmes are offered free of charge. Upon their completion School leaving certificates are issued for gained qualifications (ISCED 35, EQF level 4) provide access to Universities.

The so called second chance formal initial vocational education is offered through two types of programmes. The evening technical school programmes to support the integration of school dropouts in the workplace and in society. The duration of studies is one to four years. Attendance is free of charge and leads to the acquisition of a leaving certificate, which provide access to Universities. Three-year programmes of the afternoon and evening classes of technical schools offer a variety of theoretical and practical courses. The objective of these programmes is to offer, at limited fees, formal initial VET to employed or unemployed adults.

- **CLUSTER: VET at post-secondary level**

VET at post-secondary level started its operation in the academic year 2012-13 and is currently provided at four public institutes/colleges that function under the jurisdiction of various ministries and at several private colleges. Through this activity students acquire or complete their technical and vocational education (ISCED 45, EQF level 5). The duration of the programmes is two years, on a 5-day basis. Attendance is free of charge and it includes workplace learning.

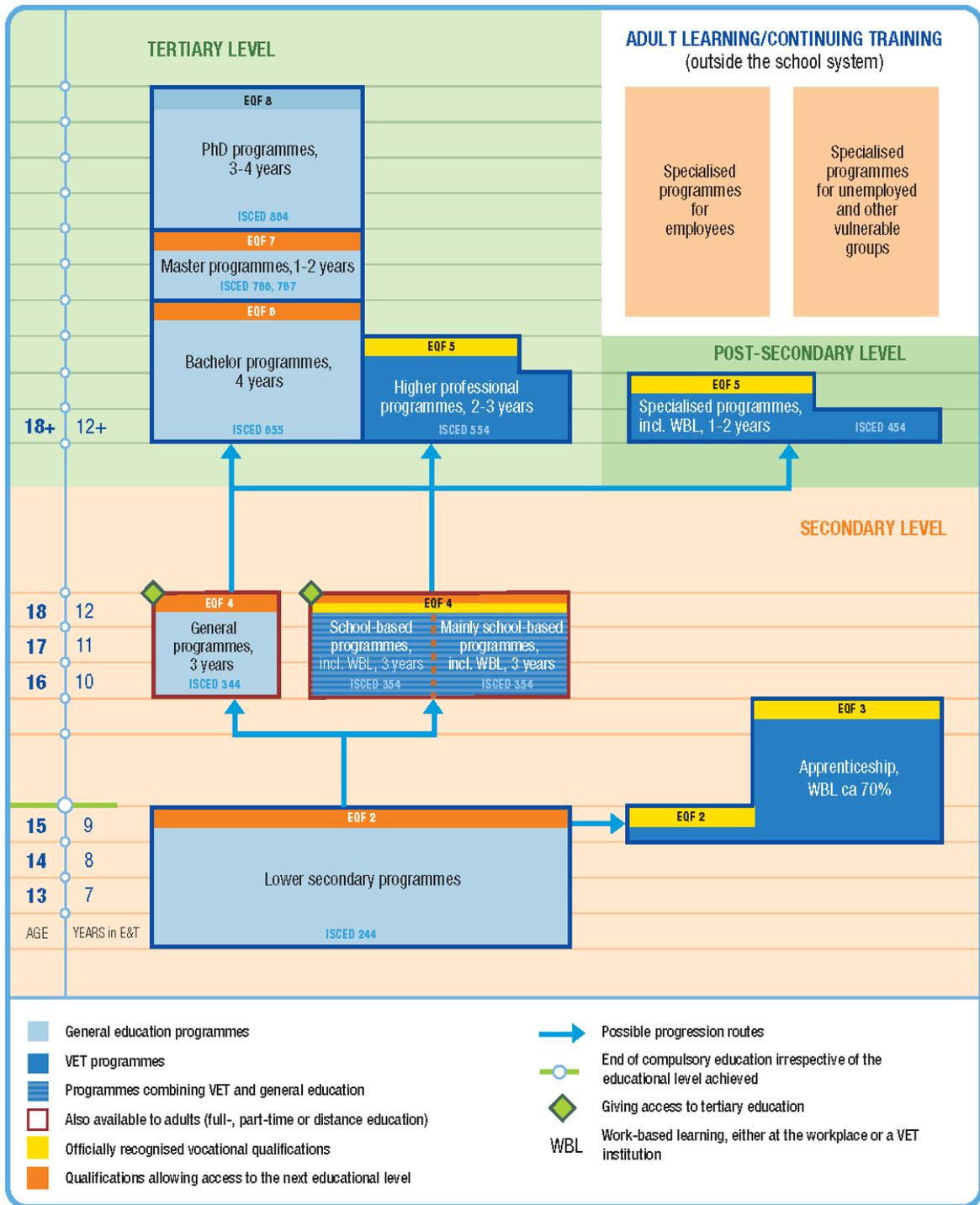


Figure 4. VET in the education and training system in Cyprus

- **CLUSTER: VET at tertiary level**

VET at tertiary level is provided by 4 public and 40 private institutions of tertiary education. The basic admission requirement for public tertiary education institutions is completion of 12 years of primary and secondary education. The education is free of charge. Studies are organised in diploma programmes, which include different specialisations. Successful completion of the programme, which lasts one to three years, leads to a diploma or higher diploma awarded by the institution (EQF level 5). Private institutions of tertiary education offer a wide range of academic as well as vocational programmes of studies at various levels: diploma, higher diploma, bachelor and master's degree.

- **CLUSTER: Other forms of training**

Certain civil society institutions (or NGOs) and ministries and as well as social partner organizations provide wide range of formal or non-formal VET activities, both job- and non-job related. The courses offered may be both free of charge and paid; the fees differ according to the subject, provider, target group, urbanity of the area or the number of residents. These forms of training refer to VET programmes, which do not lead to a formal qualification but to professional development and updating of specific skills and competences. These are:

- training for the employed;
- training for the unemployed;
- training for other groups at risk of exclusion from the labour market;
- training for adults.

2.2.3 Tendencies and problems of VET

Cyprus has joined the European Union in 2004. Three years later, in November, 2007 a Decision of the Council of Ministers was issued regarding the preparation of the National Lifelong Learning Strategy, as a harmonization effort with the vision of making a European Area

of Lifelong Learning. At present Cyprus lifelong learning strategy, CyLLS for 2014-20 is in action. It addresses the following challenges and needs with regards to VET:

- to increase accessibility of education and training systems for all citizens of Cyprus and to facilitate the links to the labor market;
- to improve infrastructure of education and training systems, including infrastructure for continuing training, accreditation, validation and certification of qualifications in order to meet the educational and training needs of Cypriot society;
- to enhance research and development activities, including skills forecasting and research on the economic and social outcomes of education and training;
- to attain efficiency in governance of lifelong learning systems, introducing new mechanisms and tools for efficient governance of the education and the training system.

The current situation with the VET in accordance with Cedefop Country statistical overview, 2015 is summarized in Fig. 5. Three key points are considered: Access, attractiveness and flexibility; Skill development and labour market relevance; Overall transitions and employment trends.

Access, attractiveness and flexibility - Participation in IVET in Cyprus is relatively low compared with the EU average in 2012. However, the share of enterprises providing training in Cyprus is higher than the EU average. The proportion of individuals who wanted to train but did not is also higher.

Skill development and labor market relevance - Figures for Cyprus are particularly high for several indicators in this group. The percentage of 30 to 34 year-olds who have completed tertiary-level VET (ISCED 5b), the percentage of innovative enterprises providing supportive training is also much higher than the EU average. The same is valid for the proportion of STEM-graduates from upper secondary IVET. The employment rate of IVET graduates (aged 20-34) at ISCED 3-4 is also above the EU average.

Overall transitions and employment trends - The unemployment rate for 20 to 34 year-olds is higher than the EU, and the employment rate for recent graduates is much lower. The unemployment rate for 20-34 year-olds appears to have grown more rapidly in Cyprus than in the EU between 2010 and 2013. The same is observed for the NEET-rate. The share of early leavers from education and training has decreased between 2010 and 2013. The share of 30 to 34 year-olds with tertiary-level education already exceeds the Europe 2020 average target (40%). At 47.8%, this share has also surpassed the national target (46%).

The main policy measures in the Lifelong Learning Strategy that relate to VET aim at:

- promoting continuing training and strengthening the employability of young, unemployed people and economically inactive women;
- modernizing teaching methods and curricula to include the use of technologies in teaching;
- supporting systems for the education and training of people with special needs and disadvantaged people;
- expanding the opportunities offered to young people to higher education studies in Cyprus;
- improving teachers' skills to a level higher than their basic vocational skills and/or the skills acquired during their professional experience;
- conducting feasibility studies for the operation of public vocational lifelong learning schools;
- strengthening the administrative capacity of the public sector through training and development;
- encouraging the private sector to get involved in education and training development;
- encouraging cooperation between relevant stakeholders, including policy makers, teachers' unions, trade unions, political parties, parents' and pupils' associations for lifelong learning.

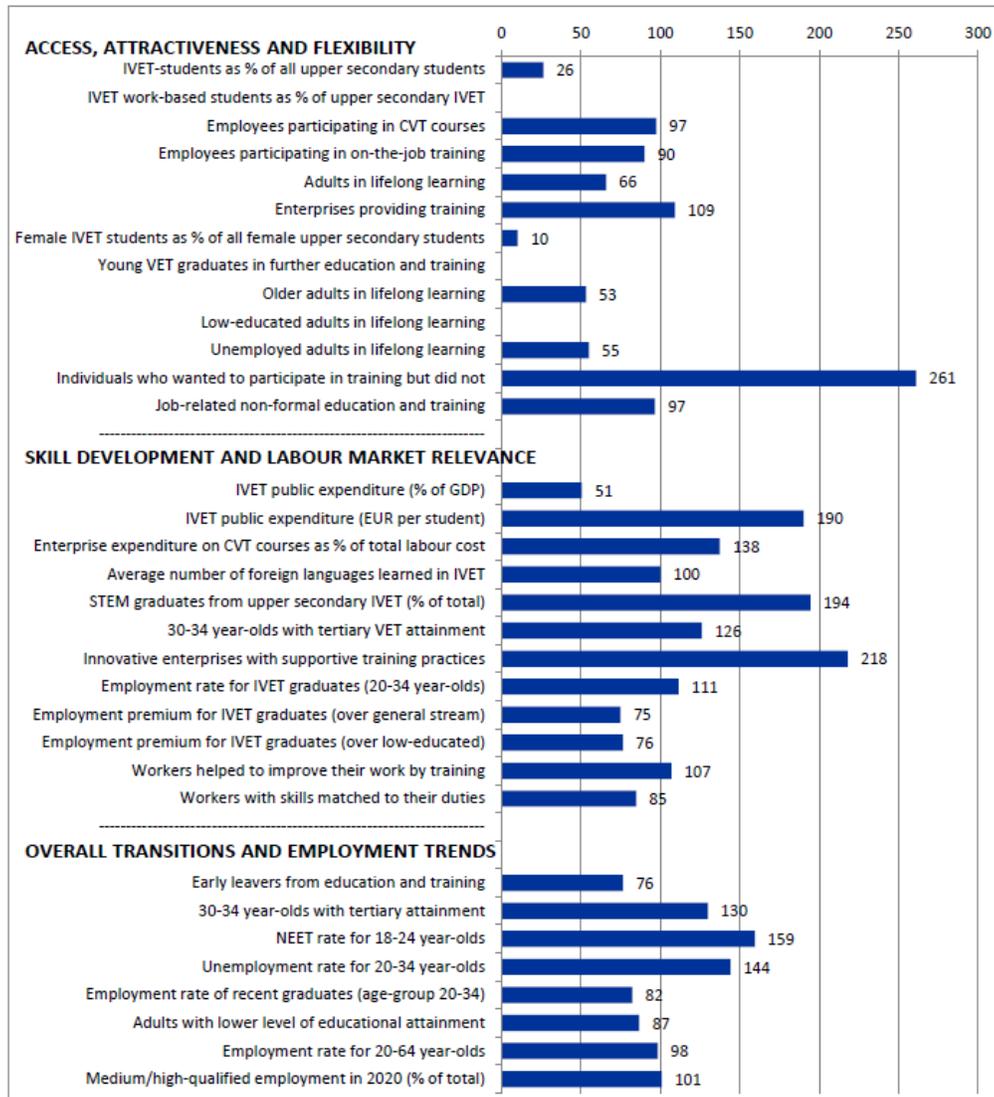


Figure 5. VET indicators for Cyprus for the most recent year available. Index numbers (EU=100).
Cedefop Country statistical overview, 2015

3. Alignment with National/EU VET training priorities (implementation of EQF/NQF and ECVET)

VET is an important and prominent part of the Cyprus lifelong learning strategy for 2014-20. The main actions designed to achieve the objectives of the strategy include, amongst others, the development of the National Qualifications Framework and the promotion of the System of Vocational Qualifications, the enhancement of lifelong guidance and counselling services, the improvement of the attractiveness of Secondary Technical and Vocational Education and the modernisation of curricula. Furthermore, the Strategy includes actions for training the unemployed in order to acquire the necessary knowledge, skills and attitudes in sectors with a potential for development, job placements of the unemployed to acquire work experience in enterprises / organisations and enhancement of the New Modern Apprenticeship.

3.1 EQF – NQF interrelation

3.1.1 Cyprus national qualifications framework for lifelong learning

Cyprus has developed a comprehensive national qualifications framework (NQF), which encompasses all levels and types of qualifications from all subsystems of education and training. A decision to create the NQF was taken by the Council of Ministers in 2008 (Decision No 67 445) and the first referencing report was presented to the EQF advisory group in June, 2014. The final version of the Report is prepared taking into account the comments of the EQF Advisory Group and is presented and submitted again to the Group in February, 2015.

The Human Resource Development Authority of Cyprus (HRDA) has also developed a System of Vocational Qualifications (SVQ) as an integral but separate part of the NQF. The common structures and elements of NQF and SVQ, which will offer opportunities for combining and transferring credits, are being discussed.

3.1.2 Development and introduction of NQF

The main role of NQF is to classify qualifications according to predefined levels of learning outcomes. The idea (in long term) was to link the NQF to the assessment and award of qualifications but also to wider reforms and procedures for quality assurance.

The objective of NQF is to develop and implement a framework that can operate outside formal education and allows awarding of qualifications in accordance to common unified criteria.

The first step in the realization of this objective was to include the vocational qualifications system – established by the HRDA – in the framework. The vocational qualifications refer to occupational standards and certify learning outcomes acquired at work.

The aim of NQF to promote LLL is being progressively achieved by increase of adult participation in lifelong learning (currently at 7.4 %), which remains below the EU average of 9.0 % in 2012. Thus the NQF development and implementation will give a second chance to all Cypriots for educational advancement and job progression through LLL.

NQF developments are initiated and coordinated by the general directorate for VET at the Ministry of Education and Culture.

The framework is not yet operational. However, Cyprus NQF will be established at the Ministry of Education and Culture as an in-service department and will be implemented gradually.

3.1.3. Prospects for implementation of NQF

The implementation of NQF requires the joint efforts of all stakeholders, responsible for accreditation of qualifications. Since the development of a NQF to promote recognition of academic and vocational qualifications acquired in Cyprus is a government priority, a new permanent body – council of the NQF of Cyprus – including all relevant stakeholders is structured. The Council functions as an advisory body with main tasks focused on:

- consulting with stakeholders on NQF development and implementation;

- developing, implementing and reviewing NQF procedures;
- disseminating public information on the NQF;
- advising the Ministry of Education and Culture on policy and resource implications.

To facilitate the process, the Council of Ministers appointed a high-level national committee comprising the Directors-General of MoEC, the MLWSI and the HRDA. At the same time, a number of meetings with all the stakeholders involved (students' and parents' organisations, education providers, VET providers, employers' and employees' organisations, teachers' organisations, the HRDA) have taken place, as the first step of the implementation plan.

The testing period of the implementation of the NQF will be between September, 2015 and May, 2016. The testing results will be evaluated and final tuning of the framework will be done.

Regarding the regulated professions, Cyprus has fully transposed the new Directive 2005/36/EC into national law by adopting eight different laws, one for the general recognition of regulated professions and seven others for the seven sectoral professions (nurse responsible for general care, dental practitioner, veterinary surgeon, midwife, architect, pharmacist and doctor).

3.1.4 NQF structure

The existing national qualifications system is mainly based on the length of education and training programmes. Implementing the learning outcomes approach in the building of the NQS allows different interpretation across levels and sectors. The EQF eight-level reference structure has been adopted in general, reflecting the national qualification system's main characteristics. Level descriptors are described in terms of knowledge, skills and competence. The descriptors are simultaneously formulated for all levels to define clear progression from one level to the next. They indicate the standards a learner should achieve, when awarded certificates at different education levels.

- Knowledge is defined by type and complexity of knowledge involved and ability to place this knowledge in a specific context.
- Skills are formulated by type of skills involved, complexity of problem-solving, and communication skills.
- Competences contain the following aspects: space of action, cooperation and responsibility, and learning skills.

VET qualifications are aligned from level 3 to 7 of the NQF (Fig. 6).

The emphasis in NQF put on learning outcomes, demands on its turn a need to revise curricula, learning programmes and assessment methodologies towards the learning outcomes. In this context, several reforms are under way. For example, the reform for upgrading curricula for pre-primary and upper secondary education, upgrading VET through introduction of post-secondary institutes for VET (technological lyceums) (launched in September, 2012), and introduction of new modern apprenticeships. In addition to curricula and programmes, strong emphasis is given to upgrading teachers' competences and establishing and monitoring quality of learning outcomes.

NQF levels	Education certificates/diplomas/degrees	SVQ	EQF levels
8	Doctoral degree		8
7c	Master degree		7
7b	Post-graduate diplomas	SVQ level 5	
7a	Post-graduate certificates		
6	Bachelor degree	SVQ level 4	6
5c	Higher certificates and diplomas (three years)		5
5b	Post-secondary certificates and diplomas (two years)	SVQ level 3	
5a	Post-secondary certificates and diplomas (one year)		
4	Upper secondary general education and evening schools certificates (12th class or 12 and 13th for some private schools)	SVQ level 2	4
	Upper secondary technical and vocational education and evening technical schools certificates (12th class)		
3	Lower secondary education certificate 10th class	New modern apprenticeship	3
2	Lower secondary education certificate ninth class	Preparatory programme (new modern apprenticeship)	2
1	Compulsory education certificate (elementary school certificate, or graduates of seventh and/or eighth class)		1

Fig. 6 Cyprus NQF and SVQ interrelation

In formal education, learning outcomes are mainly expressed as part of a subject and stage-based general education. Experience gained in developing competence-based vocational qualifications contributes significantly into NQF implementation. Since vocational qualifications are based on occupational standards it is possible to award a qualification to candidates irrespective of how and where they acquired the necessary knowledge, skills and competences.

3.1.5 NQF for validation of non-formal and informal learning – referencing to EQF

The development of a competence-based system of vocational qualifications, which will constitute an integral part of a future NQF, is a high priority for Cyprus. The vocational qualifications system is designed for the assessment and certification of the competence of a

person to carry out a specific job in real or/and simulated working conditions. The standards of vocational qualifications define the framework for the training and development of a person, providing him or her, the opportunity to reach the appropriate competence level. Opportunity for access is provided to persons regardless of the way they have acquired the knowledge, skills and competence.

Standards of Vocational Qualifications

The system is being established and implemented by HRDA in a dual-phases fashion.

During the first phase (2006-09), five standards of vocational qualifications at level 2 have been developed in three sectors of activity of high importance for Cyprus economy: hotel and restaurants, construction and retail trade for the occupations of waiter, cook, receptionist, construction mason and sales person. The standards that are developed, are discussed by the sectoral technical committees of vocational qualifications and approved by the Board of Directors of the HRDA.

During the second phase (2007–15), co-financed by the ESF, 80 new standards are expected to be developed (67 already available). The standards cover a broad range of occupations in the sectors of hotels and restaurants, retail and wholesale trade, construction, manufacturing, repairs of motor vehicles, systems and networks of communication and computers and hairdressing as well as the occupation of trainer of vocational training. This phase is characterized as well with the real opportunities for access provided to the employed, unemployed and economically inactive persons. It is expected that during the second phase, 5 500 persons will be given the opportunity to get their qualifications recognised.

Assessment and Certification of Vocational Qualifications

The process of assessment and certification includes three stages:

- Diagnosis of knowledge and competences: it is conducted by an internal assessor, usually through an interview with the individual. The internal assessor uses a template to identify whether the applicant fulfils the requirements for the whole or part of the qualification.

- Assessment: it is conducted by an assessment committee, which includes internal and external assessors. It comprises a series of meetings in Assessment Centres. Both the Assessment Committee and the Assessment Centres have been approved by HRDA. The assessment methods and processes are verified by an external verifier.
- Certification: assessment results are submitted to HRDA, which decides whether the candidate will be fully certified and consequently, be awarded the qualification or will be partially certified and receive a certificate for specific units.

3.2. European Credits System vs. national grading systems

The European Credit System for Vocational Education and Training (ECVET) is unseparable part of the development of European cooperation in VET. It constitutes one of its operational tools. The process of development and implementation of ECVET in Cyprus, as a unit-based credit system, started in September, 2011 when working committee on the subject was set up. This committee comprises stakeholders from the public and the private sector, such as the MoEC, the MLWSI, the Directorate General for European Programmes Coordination and Development, the HRDA, the Foundation for the Management of the European Lifelong Learning Programmes in Cyprus and private providers of VET.

Special efforts have been input by the responsible stakeholders to support recognition of qualifications abroad and mobility. They actively participate in the management and promotion of activities related to Europass documents, as well as for the provision of information regarding the documents.

In 2013, almost all interested organisations both private and public have been contacted to promote the Europass documents and make them accessible to all citizens. Around 80 % of the higher educational institutes automatically issue the Europass diploma supplement to their graduates, and the number of Europass diploma supplements issued in 2013 reached 5 000. Furthermore, 1 300 Europass certificate supplements have been issued to the 2013 technical schools' graduates and the graduates of the CPC accelerated training programmes.

Additionally, the Cyprus NEC in cooperation with the Foundation for the Management of the European Lifelong Learning Programmes in Cyprus is encouraging all organisations participating in mobility programmes to issue the Europass mobility document and during 2013, more than 400 documents were issued.

In 2013, the Cyprus NEC organised 60 workshops with 758 participants. During the workshops, the participants created their own Europass CV and were advised on how to write a cover letter and on how to perform well in an interview.

3.3 Selection of key qualifications for VET in the field of bio-fertilizers

Increasing environmental awareness is recognised as strategically important in order to face up ambitious European environmental objectives on the one hand, and the creation of jobs and increasing competitiveness on the other.

For workers in agro-economy sector and in jobs that depend on the land and the environment, there is a particular need to take account of agro- and rural development activities in their decision-making, and use products, processes and technologies to reduce the impact of economic activity on the environment.

In agricultural practices where job creation is envisioned, there is a recognised need for re-training and increased knowledge and skills in sustainable rural development practices of teachers, trainers, other type of training providers.

As far as managers are concerned, sustainable rural development supported by proper legislative changes regarding consumption and competition for resources presents a series of challenges and opportunities for managers in services and production. The main groups of skills that are required comprise:

- Production, sales and customer service skills for occupations engaged in delivering environmental friendly agro-technologies and advice to consumers;
- Management and coordination skills for holistic and interdisciplinary approaches towards design solutions to meet economic, social and rural developmental objectives;

- Innovation skills and analytical thinking to identify opportunities and create new strategies;
- Business and entrepreneurial skills for those seeking to commercialise new product innovations and get hold of the potential of environmental technologies;
- STEM skills: general understanding of the role of the Science, Technology, Engineering and Mathematics' contribution to the process of sustainable rural development strategies implementation.
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4. National support evaluation in terms of innovation, success and sustainability of VET

Currently, the biggest challenge of the country's economy is the creation of adequate number of new and quality jobs. Therefore, the major emphasis of the measures implemented in 2013 and foreseen for 2014/15 is on the facilitation of creating new jobs towards 75 %-77 % of the population aged 20–64 to be employed by 2020. The measures include subsidised employment schemes, placements for acquiring work experience, enhancement of the skills and competencies of the unemployed and the promotion of entrepreneurship, the extension of the working hours of retail shops and fighting undeclared work.

Among the measures which have been in place and their implementation continues at present are the New Modern Apprenticeship, the Post Secondary Vocational Education Institutes, the job placement and training of young unemployed tertiary education graduates, the accelerated training of young newcomers and other unemployed persons, training programmes for upgrading the skills of unemployed persons, a scheme for the improvement of the employability of the unemployed, a scheme for the improvement of the employability of economically inactive women, the enhancement of cooperation between universities and enterprises, the development of a competence-based system of vocational qualifications, the reform of the curricula at secondary and tertiary education, employment forecasting as well as the evaluation of the impact of the Human Resource Development Authority's (HRDA)

In order to achieve improvement and development of VET in our country, measures and actions will be pursued in the following sectors:

- Structural / institutional actions for:
 - Re-planning, restructuring and modernising the public Secondary, Technical and Vocational Education;
 - Restructuring the management of Secondary, Technical and Vocational Education at Ministry level;
 - Further implementation of Law on Secondary, Technical and Vocational Education and its relevant regulations;
- Pursue of innovations within the legal framework as follows:
 - Reviewing of the specific goals of Secondary, Technical and Vocational Education;
 - Support and enhancement of the programmes of Technical and Vocational Education;
 - Introduction of new subjects to the programme of studies of Secondary, Technical and Vocational Education
 - Improvement / introduction of technological equipment to train and support the teaching and learning process inclusive ICT tools ;
 - introduction of new sections and specializations in the Secondary, Technical and Vocational Education;
 - Development of programmes of Secondary Technical and Vocational Education in Evening Technical schools and programmes of life-long Technical and Vocational Education;
 - Development of programme of vocational training;
 - Establishment of courses for training for examinations;
 - Updating of the Apprenticeship system.

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