# *Chapter 5*

# Creating jobs for Tunisian youth in the green economy: Anticipating skills and developing entrepreneurship

*This chapter examines the opportunities for the creation of jobs for young people in the green economy and actions which can build skills and entrepreneurship around these opportunities. The economy will inevitably become greener, either through the influence of external factors, i.e. climate change, pressure on non-renewable resources and the related adaptation policies, or through a domestic strategy in the direction of sustainable development. This will have implications for vocational education and training (VET), both in terms of the skills which will be in demand, and the opportunities for entrepreneurship. Greening of the economy will not have the same effect on all sectors, and a number of areas are examined where there will be opportunities for the creation of new jobs, including for youth through the creation of green jobs. Capturing such opportunities will require clear government strategies, prioritisation and action.*

## Introduction

Previous chapters have discussed the key policy approaches to increase the employability of young people. At the same time, it is also essential to consider the complementary issue about the creation of new employment opportunities, and in particular the opportunities stemming from the transition to a green economy. While some opportunities may arise regardless of actions by the government, an appropriately conducive strategy needs to be implemented and ensure good co-ordination between different Ministries.

There is a general presumption that the world will experience green growth going forward and that, in order to prepare for this, countries will have to adjust their policies and priorities in such a way to better reconcile economic growth, social justice and environmental concerns. Although most countries, including Tunisia, have some form of sustainable development strategy, retaining a balance between interests is a challenge to policy makers, particularly as it can be expected that there will be trade-offs between short-term economic effects and longer term social and environmental problems. At the same time, external factors , *i.e.* climate change and the related adaptation policies, will mean that there will be implications for employment whether this is through losses of jobs in declining and polluting industries, the creation of new employment types, or a change in the balance of skills required in particular sectors.

Policy makers can respond to these challenges in a variety of ways: by means of short-term adjustment measures; as part of a broader, long-term strategy for greening the economy; by concentrating actions on specific sectors where most change is likely to take place; or, indeed, by some combination of all three approaches. This chapter examines these policy approaches and their implications for Tunisia, specifically with regard to youth employment. In considering a sectoral approach, sectors of importance for Tunisia are chosen, where opportunities for enhancing youth employment appear to be particularly promising. In this light, the chapter discusses the variety of areas for policy action which would both enhance green growth and create opportunities for employment and entrepreneurship for young people.

The following conclusions can be derived from the chapter:

- ***Firstly, even if no policy action is taken to move towards sustainable development, Tunisia will confront the same challenges that all countries will be facing, as a result of global climate change trends and the pressures on non-renewable resources***. Such challenges can be expected to result in the creation of new opportunities for workers, but also risks. In this context, a first essential pre-requisite for Tunisia will be to ensure that the appropriate set of well-functioning labour market institutions and skills policies are in place to enable the country to react to changes. Indeed, labour market and skills policies can make an important contribution to a successful transition by facilitating the structural change required to put green production practices in place.
- ***Policies should also seek to maximise the benefits of green growth for workers while giving assurance that unavoidable adjustment costs are shared fairly***. Failure to meet these challenges could undermine political support for green growth policies. Given the high proportion of youth in the Tunisian population, their generation will be the first to benefit. Under the circumstances, a first stage would be to consider incorporating green skills in all curricula, to enable those who have been trained to be better able to adapt to changing circumstances.

- ***Furthermore, to successfully manage the transition towards a green economy the Tunisian Government will have to look at ways to build a comprehensive strategy, which will have to involve all ministries, as well as an effective social dialogue***. *T*his will require further elaboration of the existing Sustainable Development Strategy and better clarity regarding institutional co-ordination.
- ***In addition, there are a number of specific areas where action could be taken to improve green employment and entrepreneurship***. The following areas have been chosen as ones where actions recommended in previous chapters will have the greatest impact and where there will be the best opportunities for youth employment. In these areas the transition to a green economy will either increase employment or significantly change the nature of jobs in the sector.
  - *Innovation and a clean-tech cluster.* Further actions can be taken to encourage graduate entrepreneurship, and to seek spin-outs from universities and research institutes. Opportunities to develop or attract businesses connected with existing green investments need to be explored more fully. A green focus could be given to entrepreneurship support, including that targeting the social enterprises, and higher education.
  - *Energy.* The existing and successful Prosol initiative could be continued and expanded to other areas of renewable energy. Barriers to the production of energy at a municipal level need to be considered.
  - *Waste and recycling.* Greater involvement of social enterprises in recycling and reuse could both increase employment and be used for training unemployed youth. Barriers to the use of social enterprises need to be addressed and the results of current actions to resolve issues of legal status and finance need to be followed through.
  - *Tourism.* Efforts to make existing tourism more sustainable need to be reinforced in the light of external pressures. Development of eco-tourism can bring employment to more remote areas, but requires better organisation and an overall strategy.
  - *Agriculture.* Organic agriculture represents an opportunity for both the environment and employment. Tunisia has an existing organic sector, but with appropriate public support its size and export potential could be increased.
  - *Construction.* Although for the construction sector itself there will likely be little net growth in employment, a need for policies to upgrade skills can be expected, while better management of resources (recycling of waste, and improving energy efficiency) will support jobs in other sectors.

There are synergies between these sectors suggesting that there exists considerable scope to green the Tunisian economy by addressing particular sectoral challenges as part of a holistic policy reform. The key building blocks of such a comprehensive reform agenda are summarised below (Box 5.1).

### Box 5.1. Key recommendations

Given the challenges presented in this chapter, the OECD suggests that:

- Actions are taken to improve the effectiveness of the VET system and its ability to react to changing skills requirements. These are outlined further in chapter 4
- *Le Centre National de Formation de Formateurs et d'Ingénierie de Formation* (CENAFFIF) [The National Centre for Training of Trainers and Pedagogy] should review all curricula from the point of view of green employment, seeking to introduce appropriate green skills and through this the adaptability of the workforce.
- The existing Sustainable Development Strategy should be reviewed in particular to ensure that all key stakeholders are committed to its implementation, and that there are appropriate implementation and co-ordination institutions with the power to implement the strategy.
- Opportunities for employment through necessary public works, particularly with regard to addressing the problems of water supply, should be used as a way of increasing employment and training the unemployed.
- In order to maximise employment opportunities for young people, there should be a concentration on actions in fields where there will be either employment expansion or substantive changes to the nature of employment. These are likely to be innovation and high tech clusters, energy, waste and recycling, tourism, agriculture and construction. For the most effective results there will be a need to co-ordinate work between different Ministries. This should be done at two levels, on the one hand seeking better co-ordination within the government (including reviewing the Sustainable Development Strategy) and on the other hand promoting specific actions, possibly of a pilot nature, in order to gain experience and promote trust between different organisations.
- Existing support to entrepreneurship in universities should be extended by broadening the opportunities given to students to participate in entrepreneurship classes, while at the same time deepening the support given to the smaller number of students who try to start their own businesses. This will require changes within universities, including improvement of interdisciplinary working.
- Local supply chains for larger green investments should be developed by better targeting existing means of support (information, advice and training) to enterprises. This will include targeted support to enterprises which could form part of such a supply chain as well as more general actions to improve linkages with foreign direct investment, including information, provision of property, and structured networking between larger and smaller companies.
- The Prosol initiative should be continued and used as a model for corresponding schemes related to other forms of renewable energy.
- Consideration of local generation of energy should be considered (specifically through energy from waste), and barriers which prevent communes from taking this approach need to be examined and removed.
- The role of NGOs and social enterprises in the realisation of the strategy for integrated and sustainable waste management needs to be further supported. Existing funds for the support of social enterprises should be targeted more clearly with relation to opportunities related to recycling.
- The existing eco-label system should be further elaborated and enforced in the tourism sector in order to improve the environmental impact of mass tourism.
- A new eco-tourism strategy should be developed, based on engaging all key stakeholders and with a view to creating a network which can be used to implement the strategy.
- Further support should be given to the enlargement of the organic sector in agriculture. This will include better co-ordination of promotion of exports and better targeting of subsidies to areas where Tunisia is competitive, notably fruit and vegetables.
- A sustainability strategy should be developed for the construction sector, which will include the need for upgrading skills, incentives for the use of greener approaches (such as using recycled materials) and provisions for recycling construction and demolition waste (which should also be explicitly included as a target in the integrated waste management strategy).

## Labour market challenges during the transition towards green growth

The transition to green growth creates a number of general market challenges which will apply to Tunisia as they do to other countries. Recent analysis carried out at both the OECD and the European Commission shows that a successful transition towards a low-carbon economy will necessarily reshape the labour market, creating new opportunities for workers, but also risks. Labour market and skills policies can make an important contribution to a successful transition by facilitating the structural change required to put green production practices in place. Policies should also seek to maximise the benefits of green growth for workers while assuring that unavoidable adjustment costs are shared fairly. Failure to meet these challenges can undermine political support for green growth policies (OECD, 2011a; and European Commission, 2013)

Greening the economy will create additional employment in some sectors, but will also make some jobs obsolete and change the skill requirements of others. One of the main labour market impacts will be to alter the sectoral composition of employment, with "green" sectors growing rapidly and the most $CO_2$-intensive sectors needing to radically change their technologies or shed jobs in the transition towards green growth.

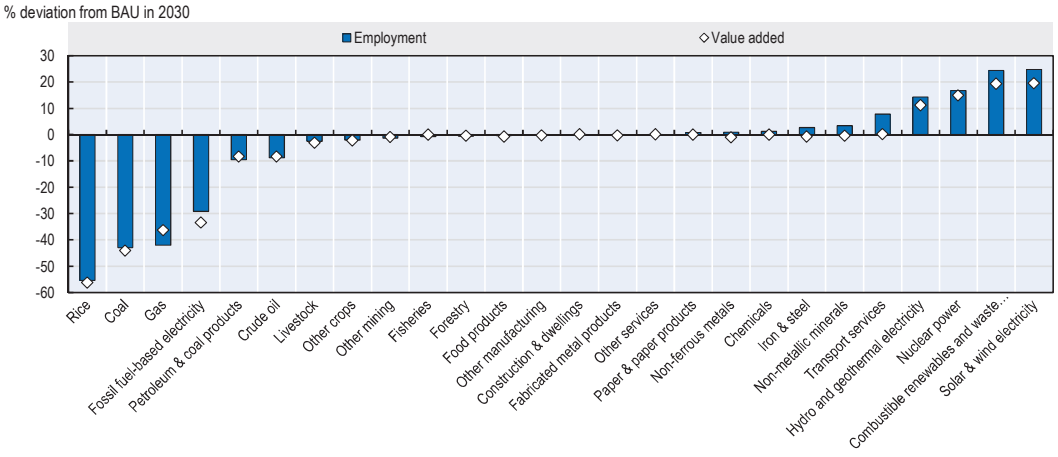
The international evidence so far available about labour market effects of green growth and related wage developments is not clear-cut. For example, recent simulations carried out by the OECD suggest that the net impact on overall employment is likely to be small. Even the more sizeable impacts on the industry mix of jobs (see Figure 5.1) will be small compared to the high underlying rates of labour reallocation generally observed in European countries during recent decades, including due to the impact of deepening globalisation. The main reason for this is that much of the economic restructuring implied by an aggressive green growth policy occurs within the energy sector and that sector employs only a small share of the total workforce. While certain green sectors, such as renewable energy, will grow at a rapid pace, the overall labour market impact will likely be modest due to the fact that employment in these sectors starts from such a low base.

As in the case of the ICT revolution, the shift towards greener production practices will lead to changes in skill requirements across the economy. However, unlike the ICT revolution there appear to be few uniquely "green skills"; the green skills that new labour market entrants will require can largely be acquired by incremental enrichment of established vocational education and training programmes, combined with some top-up training in the case of experienced workers. However, the strong increase in environmental patenting observed in some countries such as Germany, also suggests the importance of preparing the workforce for a period of rapid eco-innovation, including by raising science, technology, engineering and mathematics (STEM) skills.

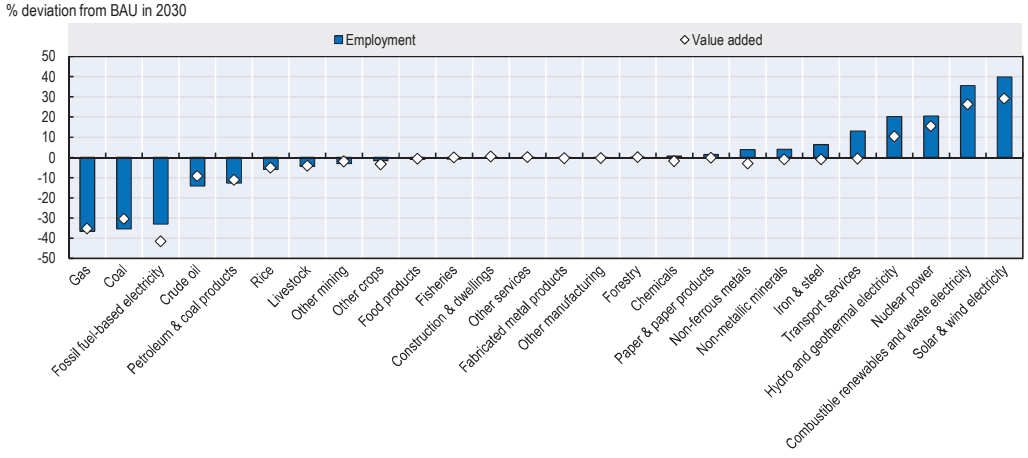
The transition towards green growth will not only create new opportunities for workers, it will also create challenges, particularly for workers in the most carbon-intensive industries. Should many workers in these industries lose their jobs in the transition towards green growth, they are likely to face above-average adjustment costs since many of these industries are characterised by relatively low educated workers with a low level of labour mobility. Several are also highly localised. It should be underlined, however, that close to 90% of $CO_2$ emissions in the European Union are accounted for by a relatively small number of industries, which absorb just 14% of employment. Although relatively few workers appear to be at-risk, some of the workers in these industries will need targeted assistance, such as retraining to be able to work with cleaner technologies, or help finding new jobs in growing green sectors. These measures will be particularly important in several European countries where coal mining or heavily polluting heavy industry are still major sources of employment.

**Figure 5.1. Change in sectoral composition of employment**

**Panel A. Europe**




**Panel B. OECD**




*Note*: The data charted represent the differences in 2030 between projected values under a business as usual (BAU) scenario, where climate mitigation policies reflect their current settings, with an alternative scenario where aggressive mitigations strategies are implemented via an emissions trading system

*Source*: OECD (2012), "The Jobs Potential of a Shift Towards a Low-carbon Economy", *OECD Green Growth Papers*, No. 2012/01, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k9h3630320v-en.

The greening of the European economy is already generating significant numbers of new jobs in key sectors such as renewable energy, and will continue to do so in coming decades. There has also been acceleration in the development and application of new environmental technologies, which is creating new occupational specialties such as designers and operators of smart electrical grids, and opening up new export markets. For example, green technology innovation hubs have developed in the Copenhagen area and in several other EU countries, which are opening up new export markets and generating employment.

Overall the transition to greener growth is likely to involve distributional effects. While well-designed green growth policies should result in a higher level of well-being when all costs and benefits are considered, including the future beneficial effects of improved

environmental quality, the associated adjustment costs will be largely borne by specific segments of the economy and their workers. This raises distributional concerns suggesting that appropriate supporting measures may be required to compensate those directly affected.

One important challenge, particularly in light of today's youth labour market conditions in Tunisia, will be to ensure that short-term problems associated with labour market transitions do not turn into long-term disadvantages. Key policy tools to help successfully manage the transition include:

- ***Reducing insecurity due to job displacement***. The transition will reinforce the need for achieving a workable model that combines a high degree of labour mobility with appropriate support for job losers. It will be especially important to provide effective employment support to displaced workers, even if this means higher spending on active labour market policies and in-work support in the short-term. This support can take the form of adequate income replacement benefits combined with effective activation measures for benefit recipients. Some workers will need targeted assistance, such as retraining to work with cleaner technologies or help finding new jobs in growing green sectors. Reconciling efficient flows of workers from declining to growing firms with income and employment security will be a crucial precondition to defuse political opposition to green growth policies.
- ***Fostering eco-innovation through education and training***. Developing stronger basic skills in core fields, including mathematics and science, will be essential for compulsory schooling. There is also a need for a more supportive and responsive VET system. At the same time, the general case for strengthening tertiary education and VET programmes in such a way to train quality graduates who can contribute directly or indirectly to innovation in their workplace and harness research excellence and links to industry is made even stronger in the light of green growth.
- ***Redistributive policies***. The priority must be to ensure that the tax and benefit system is made more supportive of employment. Putting into place a comprehensive green strategy will provide a unique opportunity to improve the effectiveness of tax and benefit systems. The available evidence across the OECD area demonstrates how the additional revenue from carbon pricing can be used to reduce the tax wedge on labour incomes, so as to promote job creation. However, a careful analysis of the tax/benefit system in a given country will be required to assess whether current distortions from labour taxation are severe enough that this would be the most valuable use of new tax revenues, as well as an assessment of how best to target reductions in labour taxation.
- ***Green-specific labour market and skill policies, especially to help meet new job skill needs***. An OECD questionnaire sent to labour and employment ministries reveals that about 60% of the responding countries have implemented at least one labour market measure targeted on green growth, with training being the most common type of measure. However, most of these measures are of small scale and were only recently introduced. The limited experience with implementing these policies suggests that they confront two particularly difficult challenges; detecting how green growth is changing labour demand and jobs skill requirements, and co-ordinating labour market and skill policies with environmental policy. This suggests that the role for green-specific measures is likely to emerge only

incrementally, as the environmental policy framework needed to support green growth develops and experience with managing the labour market dimension of the transition to green growth accumulates.

- ***Ensuring that the manner in which green growth is promoted will provide opportunities for new enterprises and employment***. Different approaches to green growth will have different impacts on employment – for example, large scale infrastructure for renewable energy may be more efficient in power generation than local small-scale approaches, but at the same time may have less impact on employment either directly (e.g. solar maintenance engineers) or indirectly (manufacture of solar cells in Tunisia rather than importing them).
- ***Addressing the barriers that young people face in being able to compete in the market for green jobs***. Those barriers which disproportionately affect young people, for example lack of experience and finance, need to be identified. In general, young people entering the labour market are likely to have the greatest opportunities in areas where there are changes in skills and ways of working or where there is rapid growth in employment which is unlikely to be taken up by existing workers. It should be noted, however, that unemployment is not only amongst youth and that older unemployed may in some cases be better placed to fill jobs created as part of the green economy.

Previous chapters of this report have given recommendations on appropriate actions in Tunisia to support these policies. In addition, one important conclusion of OECD works on the issue is that to successfully manage the transition towards green growth, governments must look at ways to build an effective social dialogue, which will have a key role to play in developing green growth policies and smoothly adapting labour markets to this emerging reality. The transition to green growth will be complex and the effort required to get it through will only be sustained if policy goals and strategies are developed through dialogue with all stakeholders. Social partners' deep knowledge of issues such as job skill requirements and best practices for implementing new technologies in the workplace will be invaluable in anticipating and managing the labour market dimension of the transition to green growth.

Worldwide changes in the environment can be expected to affect Tunisia, in ways that the government cannot ignore. For example, even though the price of oil is set internationally, it affects the financial incentives for domestic consumers to switch to renewable forms of energy. At the same time, climate change in Tunisia will result in higher temperatures and increased pressure on already over-stretched water supplies. These developments will provide opportunities (for solar power, for example) while also posing important policy challenges, such as water shortages, which could hinder mass tourism, facilities and expansion. Reallocation effects on both jobs and enterprises can also be expected. Responding to these exogenous changes will require adequate "change-proof" government policies with some of the actions involved being explored in further detail in the sections below. It can be seen that inaction will have opportunity costs – for example, slow and unplanned changes (partly due to sunk costs and vested interests) can result in the inefficient use of resources, while late adaptation may result in foregone opportunities from innovation and foreign direct investment, as other countries will take advantage of them.

The challenge of moving the Tunisian economy towards a path of sustainable growth is recognised by the authorities and it has been so for some time, at least formally. What has become increasingly clear is that the question about how best to embed sustainability in concrete policy actions, and across a broad range of economic areas, remains unaddressed

(see also Adbessalem, 2014). It is important to urgently acknowledge the specific trade-offs associated with different aspects of a sustainable development strategy, in particular between economic growth, environmental sustainability, and employment and social factors. The development of such a broad strategy needs to take into account the views of a wide range of stakeholders, and the support of an enabling institutional setting where possible gaps can be addressed (see also Adbessalem, 2014). The gains of such a strategy will be higher the clearer the signals that the government will be able to send that it is serious about dealing with major environmental issue (OECD, 2011a).

In many countries, environmental externalities are under-priced or not priced at all and at the same time the dominance of existing technologies and systems can make it difficult for new technologies and approaches to compete. Tunisia has already made some progress in this respect in the field of renewable energy, but undoubtedly there are further areas where these issues need to be addressed.

## How will Tunisia's response to the challenges of green growth impact on employment?

Analysis suggests that there will be some employment growth from green factors in Tunisia, even if existing plans remain unchanged. For example, a study by GIZ indicates that the *Plan Solaire Tunisien* (PST) [Tunisian Solar Plan] will generate between 7 000 and 20 000 jobs in renewable energy by 2030, based on experience from other countries (GIZ, 2012). This makes for a considerable expansion, in light of the fact that fewer than 3 500 people are employed in the sector at present. In general, qualifications are specialisations within already existing qualifications: electricians specialised in photovoltaics (PV), plumbers in solar water heaters, etc. This can be covered by the existing system of education and training – with suitable adaptations to the curricula – noting that there is an existing higher education institute (the *Institut Supérieur des Sciences et Technologies de l'Énergie de Gafsa* [Higher Institute of Energy Science and Technology of Gafsa]), which can help create the specialists required.

The effect on youth employment is more difficult to assess. Indeed it can be expected that existing workers will be the primary beneficiaries of re-training programmes that will be implemented as demand changes. At the same time, the prospect that some new activities will emerge, which did not exist in more traditional industries, will open up new job opportunities for the younger generations to capture.

Nevertheless, the discussion in the previous section suggests that some caution should be applied when assessing the size of possible effects on overall employment. Analysis of developed economies reveals that even where these effects will be positive, the biggest impact will likely take the form of changes in the distribution of total employment across sectors, rather than in total employment (OECD, 2012a). This will clearly have implications for retraining, but also, and more generally, for the broader set of labour market activation policies that will have to be provided to existing workers to smooth their reallocation. In this context, Tunisia will need to form a clear vision of the sectors where change is most likely to take place, and where employment reallocation effects and/or the opportunities for new jobs are greatest. However, an important line of policy action should also be directed at improving the broad system of labour market institutions as a policy tool of early intervention and capacity building. The reforms put forward in Chapters 2 and 3 of this report provide a useful framework for complementary labour market and social policies to help Tunisia cope with the transition to a greener economy.

In approaching green growth, one additional important question for Tunisia will be about whether "green skills" form a bottleneck, *i.e.*, whether there are specific skills, which

are needed for green growth and which did not previously exist. In this regard, a study on skills for green jobs in Tunisia concludes that there is a need for a wider overall strategy for VET, and adaptation of the curriculum by the addition of modules on environmental matters (MDGIF, 2013). In a time of change, a responsive and flexible VET system is essential, and needs to be demand driven (since not all changes are under direct governmental control). This means adjusting supply to meet demand, having the ability to forecast demand, and having the ability to adapt curricula to meet the detailed needs of new jobs based on existing skills.

Useful policy insights to improve Tunisia's VET system are discussed in Chapter 4 of this report. In a nutshell, the VET system will need to be adaptable, demand-driven, and able to forecast changes. Green skills/education should be considered as part of all curricula. CENAFFIF shows ability to specify new qualifications and curricula based on analysis when the expected demand is known (for example as part of the Prosol programme). Analysis in Chapter 4 suggests that there are still issues with regard to responding to market demands (rather than the requirements of centrally conceived programmes) and forecasting skills. Under these circumstances it is important to review all curricula and to insert appropriate green aspects into them, in order to prepare students for new green employment opportunities. In a similar vein, the Higher Education system will need to teach a wider range of skills and include support for students to be adaptable as they face the labour market.

At the same time, the support system for entrepreneurship will need to identify opportunities related to green growth and to ensure that new entrepreneurs have the right detailed advice and information. Removing barriers to entrepreneurship (availability of finance, training, information and advice) will be essential to strengthen the greening of the Tunisian economy. As with qualifications, there will be a need to complement ordinary measures of support for entrepreneurship with tailored advice, training and information to raise awareness of the opportunities related to green growth. A particularly important age group to target will be the youth.

A recent study shows that there is already institutional development in this direction with not only a National Strategy for Sustainable Development but also specific assistance available to SMEs from *Centre International des Technologies de l'Environnement de Tunis* (CITET) [Tunis International Center for Environmental Technologies] (information and training on environmental issues and regulations) and *L'Agence Nationale de Gestion des Déchets* (ANGeD) [National Waste Management Agency] (information and support on waste management for SMEs) (OECD et al., 2014). This report is part of a broader work programme financed by the Middle East and North Africa Transition Fund, whose aim is to provide grant funding to address the thematic areas covered by the G8 Deauville Partnership, which was launched in 2011. The other component is a technical assistance programme, which aims to implement a *Plateforme Emplois Verts* in the governorate of Bizerte and which is operated by the Ministry of Vocational Training and Employment with the technical assistance of the United Nations Office for Project Services (UNOPS), the operational arm of the United Nations (Box 5.2). The Bizerte pilot project is another concrete example of the institutional steps currently under implementation to create a favourable "green growth" momentum in Tunisia.

### Box 5.2. The *Plateforme Emplois Verts*

The *Plateforme Emplois Verts* under implementation in the governorate of Bizerte aims to introduce, within a period of 40 months, new practices for improving youth employability and facilitating the employment, in the green sector, of around 850 unemployed young graduates and establishing 50 small and medium-size clean-tech companies. Special attention is being placed on women who constitute the majority of unemployed young graduates. The component is inclusive of all the categories of unemployed young graduates and uses a participatory approach to facilitate contribution and participation for all actors concerned (public sector, civil society and private sector).

While Tunisia has already recognised the benefits of an overall strategy for sustainable development, with a provisional strategy already in place (MEDD, 2011), further detailed elaboration remains necessary to ensure that all line ministries are engaged in its implementation. There appears to be insufficient consideration of the possible negative short term impacts of concentration on sustainability (i.e. the balance between short-term growth and longer term sustainability). Box 5.3 presents a set of OECD good practices to guide the design of a strategy for sustainable development.

### Box 5.3. Good practices in national sustainable development strategies

Although each green growth strategy will have to be tailored to the economic context, the institutional setting and the administrative capacity of the country, many pressures for change will be common across countries. An OECD review of good practice concludes that the following issues are important in the development of a national sustainable development strategy (OECD, 2006).

1. Policy integration – national strategies should give consideration to environmental, economic and social concerns in integrated approaches contained in national plans and reports.
2. Intergenerational timeframe – national strategies should adopt long-term timeframes which enable inclusion of intergenerational principles and indicators.
3. Analysis and assessments – integrated assessment tools should be used in national reports to identify the environmental, economic and social costs and benefits of policy and strategy options.
4. Co-ordination and institutions – a wide range of government departments and agencies should be involved in the formulation and implementation of national strategies, with overall responsibility in the office of the Prime Minister or equivalent.
5. Local and regional governance – local and regional authorities should be fully involved in the development of national strategies, with certain delivery aspects devolved to sub-national levels.
6. Stakeholder participation – stakeholders (e.g., business, unions, non-governmental organisations) should participate with government representatives in commissions responsible for developing and implementing national strategies.
7. Indicators and targets – strategies should be based on structured indicator systems (enumerated in national plans and reports) to assist in monitoring progress and to serve as quantitative targets.
8. Monitoring and evaluation – independent bodies or processes should be established to act as watchdogs monitoring implementation of national strategies and providing recommendations for their improvement.

While Tunisia has gone some distance in following these guidelines in its elaboration of a national sustainable development strategy, there still seem to be some gaps, in particular regarding policy integration and co-ordination, an unclear approach to work at the regional level, and a lack of data on monitoring and evaluation.

The approach needs more than a written strategy, however. The trade-offs between different aspects of sustainable development (economic growth, environmental protection, and social development) need to be both recognised explicitly and to involve appropriate mechanisms (stakeholder fora, inter-ministerial committees) where they can be discussed. For example, if employment and green growth are considered together this can have an effect on choice of projects by infrastructure ministries: a large solar plant will be green and may assist in green growth but will not have the employment impact of a larger number of small initiatives. Current strategies do not appear to provide a framework for this debate, even though there exists a *Commission Nationale de Développement Durable* (CNDD) [National Commission for Sustainable Development] and an *Observatoire Tunisien de l'Environnement et du Développement Durable* (OTED) [Tunisian Observatory on Environment and Sustainable Development]. However, this does not mean that work has not been done at a sectoral level. As Tunisia has become increasingly dependent upon imported fossil fuels, (since the 1990s), it has been a regional pioneer in the promotion of energy efficiency, as well as, more recently, in the realm of renewable sources of energy, where it leads the Arab world (see below). Measures have been introduced gradually to facilitate the private sector's participation in renewable energy sources and waste management. The government is also committed to reporting on the improvement of the framework for investment in support of green growth and to sharing the experience it has acquired (OECD, 2012b).

Direct support to facilitate the transition to green growth in SMEs appears generally absent, as are general actions to stimulate the green market (see also Abdessalem, 2014) (with some important exceptions such as Prosol – see Box 5.4). Strategies for strengthening the market to encourage green entrepreneurship through standards and regulations, and actions to influence consumer behaviour (through both pricing and softer instruments such as education and labelling) also need to be further developed.

A key area where there needs to be a public response is that of water resources, given that climate change is expected to result in a temperature rise of 2.1 degrees and a reduction of precipitation by 10-30% (both figures on a horizon of 2050). At the same time the sea level could rise by as much as 50 cm, causing real change to the ecology and uses of the coastline (MEDD, 2011). Tunisia's water resources are already stressed, so that action will be urgently required, including public works to address the infrastructural needs of change. Analysis suggests that there is a need for review of water policy, in particular because tariffs are set too low to allow for necessary investments within the current framework (OECD, 2012b). This should be an essential area to focus on in developing public works programmes (see Chapter 3), particularly in poorer regions of the country (ILO, 2011). Since the infrastructure framework hardly be improved in the most remote regions without public support, such programmes will have little distortionary effects on local labour markets.

All in all, further action needs to be taken to elaborate the national sustainable development strategy and this will include better clarity at the institutional level, showing how co-ordination will be made between ministries and how stakeholders, including those at a regional level, will be involved (see also Abdessalem, 2014). The development of skills to match a long-term sustainable development strategy will require the review of all curricula and consideration of how green considerations can influence them. Actions can be taken to stimulate demand for green jobs, in particular through promotion of green occupations within the educational system and by providing better information on green jobs and future trends. This needs to be done in the context of better skills-forecasting and reforms to the VET system to make it more demand-driven. Public works which will need to be expanded in response to climate change will contribute to job creation, particularly in poorer areas of the country, whose water resources will be disproportionately affected.

## Actions in particular sectors: where are the opportunities?

There are many areas for green growth but only a few have the potential to create employment for youth. This is because not all growth will create expansion in employment, and in some areas the jobs created are more likely to be taken by existing employees (with retraining).

- The greatest impact on youth employment is likely to be made in areas where there will be employment growth (see figure 5.1), areas where there is likely to be considerable change in the nature of employment which would not be covered by retraining existing employees, and areas where the skills required are likely to be those most prevalent amongst young people. Using this analysis, the following areas are recommended for action: ***The need for encouraging entrepreneurship, in particular in higher education, as a precondition for the development of innovative clean-tech companies****:* chosen since it covers the target group of young people.
- ***Developments in energy****:* chosen because this is an area where environmental and economic pressures mean that major change is necessary.
- ***Improving waste management****:* chosen because this is already identified as a priority in Tunisia, where a strategy for improving environmental performance exists.
- ***Tourism****:* chosen because this is a major industry in Tunisia and there are opportunities both for greening existing tourism and for the development of eco-tourism. In addition, existing environmental pressures, notably on water supply, could have an impact on the viability of current tourism approaches, so that change seems likely.
- ***Agriculture****:* chosen because this is a major employer and because of its environmental impact, but also because there has been work done already on organic agriculture.
- ***Construction****:* chosen because it is a major sector where upgrading of skills will be required, and which will have implications for employment in other sectors, in particular waste management, as resource efficiency becomes more important.

In pursuit of policies to achieve a balanced expansion of these areas, policy makers can draw on a wide range of tools including regulatory measures, as well policies to boost entrepreneurship and training. They also need to count on the support of policies to develop infrastructures – for example transport, water and water management – which represents important challenges in Tunisia. The success of these initiatives rests on the careful prioritisation of these sets of measures, and exploiting synergies and complementarities between them. This is particularly important given that the Tunisian Government is facing large fiscal imbalances that constrain the range of policy options available to it.

### *Entrepreneurship in Higher Education, Innovation and Clean-Tech*

Fostering innovation for green growth requires investment from both the public and private sectors, and, within this, support for general purpose technologies, as well as those specifically related to green sectors (OECD, 2011b). From the public side, Tunisia has moved some distance in this direction, as exemplified by the creation of the technopole at

Borj Cedra and its associated research institutes. However, the beneficial effects of these efforts on private sector investment appear to have been limited so far.

As noted in previous chapters, there is a need to improve the co-ordination of entrepreneurship support. Part of this should be a focus on green entrepreneurship since this is a potential area of market growth. For example, special attention could be devoted to spinning out new ideas from universities and research institutes, and incubating companies with a potential to deal with environmental issues. The technopole at Borj Cedra uses a similar approach. However, the results achieved so far, in terms of the number of new enterprises supported, are below expectations. Analysis of successful clusters in other countries shows that key challenges to be addressed include a weak entrepreneurial culture and incentives in research, limited capacity to involve and engage small firms, a lack of seed capital, and poor co-ordination of policies – all of which apply to Tunisia. By contrast, success clusters stories have included a mix of enabling factors, most notably, a critical mass of human capital, strong commitment of the public sector, and strong partnerships and leadership (OECD, 2009).

It should be noted that photovoltaic (PV) cell manufacture still relies on foreign imports with a limited or absent local supply chain (PV Magazine, 2012). It seems possible that new and innovative local companies which are spun out of the research institutes could fill this gap as part of wider actions to develop a local supply chain. This would help to reduce costs of manufacture, thus ultimately raising competitiveness. Developing a supply chain requires concerted efforts by local economic development agents in order to identify local companies and help them to network, but these actions are essential to instil the creation of a nascent cluster of mutually supportive companies.

The move towards green jobs can, in many areas, be further supported by social entrepreneurship, with waste management being one activity where the case for expanding social enterprises appears to be especially promising (see below). There has been renewed interest recently in Tunisia for engaging social enterprises and for the central role that they can play in the expansion of new waste management activities. To this end, several pilot projects have been launched in 2014, with the aim of gradually increasing their number and territorial coverage in the years to come. Two major barriers exist for social enterprise in addition to those of other enterprises:

- The most appropriate legal framework for the social enterprises remains to be determined. Although, in principle, social enterprises can be established using existing company law, a specific status would assist them in their operations by making it clear that they have a non-profit orientation. It is expected that a new law will be implemented soon.
- The problem of finance. In the past, the *Banque Tunisienne de Solidarité* (BTS) [Tunisian Solidarity Bank] has restricted its financing to private enterprises and individual entrepreneurs. However, BTS now has an allocation of TND 8 million from the Ministry of Employment, which could be destined to the expansion of the social enterprises.

All in all, while the infrastructure for improving graduate entrepreneurship is partly in place, there needs to be better organisation and strategic direction, alongside renewal of more general support for entrepreneurship. In respect of developing a clean-tech cluster, again the elements are in place (the technopole, connections with research, and an incubator), but as yet there is not a critical mass. Cluster development should be better co-ordinated with other investments (for example in PV cell manufacture) and greater attention

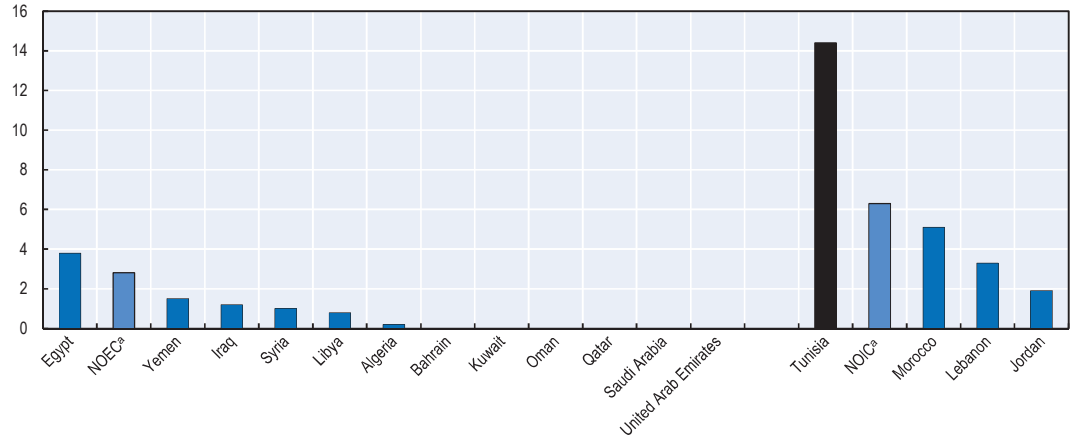
paid to supply chain development. The supportive role played by social enterprises will be important but the current projects to clarify the legal status and provide finance need to be pursued.

### *Energy: capitalising on existing experience*

Tunisia is a net importer of oil and has been for more than a decade. This has given impetus to the move towards renewable energy sources and, indeed, Tunisia is a leader in the Arab world in this respect with more than 14% of total primary energy supply from renewables compared to an Arab average of 3.1%, see Figure 5.2 (AFED, 2013).

**Figure 5.2. Use of renewable energy in Arab countries, 2010**

Share of renewable energy in total primary energy supply




*a)* NOEC = Net Oil Exporting Countries. NOIC = Net Oil Importing Countries.

*Source*: AFED (2013), "Arab Environment: Sustainable Energy: Prospects, Challenges, Opportunities", 2013 Report of the Arab Forum for Environment and Development, Arab Forum for Environment and Development, Beirut.

Energy and the opportunities offered by renewable sources of energy are clearly important for Tunisia. These opportunities, for example those stemming from solar power, have been recognised for some time (OME, 2012). Specifically, the *Plan Solaire Tunisien* (PST), which was announced in 2009 aims to give a framework for investment both in improving use of renewable energy and in increasing energy efficiency.

Tunisia is well placed for solar power, while it also has appropriate sites for wind power. PST envisages some 40 projects, and an investment of EUR 2 000 million (of which EUR 1 390 million from the private sector) over the period to 2016. Many of the projects are large infrastructure projects which will create largely temporary employment opportunities, but attention is also paid to local energy production, including at the residential level. Specifically, as part of PST, Tunisia has developed the Prosol programme, which encourages the use of small scale solar thermal water heaters, allowing residential customers to pay back the capital cost of installation through their normal utility bills. This initiative has been very successful in terms of its capacity to widen solar power usage and, has resulted in a net gain to the public budget (see Box 5.4). Part of the programme has been focused on the creation of new incentives for the enterprises involved in installation and maintenance of the installations. Qualifications have been designed by CENAFFIF and training has been delivered by relying on the VET system. Prosol is still continuing, but consideration should be given to extending the same principle to other areas of renewable energy, for example Solar PV, wind, and insulation.

### Box 5.4. Prosol Programme in Tunisia

The Prosol programme in Tunisia is seen internationally as an example of good practice in extending the usage and market for residential solar water heaters (SWH).

Initially supported by foreign donors, one key factor explaining the success of Prosol lies in the capacity of the programme to remove some of the key barriers to the expansion of SWH. These were identified as: the distortion of the market caused by subsidies to fossil fuels; the lack of public resources; lack of awareness of the potential of the technology; difficulty of households in obtaining suitable credit for investment in SWH; the need for quality control of suppliers and installers. These barriers were addressed by:

- Levelling the playing field by offering subsidies to match the current unfair advantage of gas-fired systems;
- Building up both the demand and supply sides of the market through awareness campaigns, accreditation of suppliers, and establishment of a network of maintainers;
- Using the state utility provider (STEG) to act as debt collector and guarantor to address the absence of effective consumer credit.

An analysis of the results of the programme from 2005 to 2010 (Climate Policy Initiative, 2012) shows that the capacity of SWH installed increased fivefold and some 3 000 jobs were created in the solar thermal industrial cluster. These results appear to have been achieved with a net gain to the public budget, owing to a saving of USD 15.2 million, projected to rise to USD 101 million over the life span of the SWHs, more than the government's initial investment of USD 21.8 million. The imposition of quality standards through training and accreditation schemes proved effective with technology failures at only around 1%.

Prosol is an example of good government action and how this can effectively result in the introduction of a new technology at low cost, while at the same time creating new jobs in a green industry. The careful design of the programme, particularly the quality of installations, as well as the means of payment have been important factors. Repayment through STEG has been effective since the company can enforce debts through withholding of services.

Prosol for SWH has been seen to be a success and has shown a model which could be used for other technologies, most notably Solar PV. Taking this approach will be helped by an integrated set of actions including awareness, training, accreditation, and a system of debt collection.

The experience of PST illustrates well some of the challenges to be faced in increasing the use of renewable energy and through this the generation of employment. These include: the implicit subsidies to existing fossil fuels and the sunk cost in infrastructure; the use of centralised and larger infrastructure; and the ability to fund capital costs as sources of energy change. Opportunities relate to finding appropriate ways of financing locally produced energy. This can be at the residential level using programmes like Prosol, but there are also opportunities to develop renewable sources at the municipal level. This requires some freedom to act, either through the creation of municipal companies or via social enterprise. An example is shown in Box 5.5. Evidence suggests that green energy initiatives can drive job creation and new business opportunities if they are integrated into other local development activities but that fostering green energy initiatives requires inclusive governance arrangements (Martinez-Fernandez et al., 2013).

### Box 5.5. Locally produced energy from waste, Italy

This example shows the way in which the municipality of Peccioli in the Tuscany region established a municipal company (Belvedere SpA) with the aim to address both environmental challenges and local employment needs.

At the end of the 1990s there was an unmanaged waste dump in Peccioli, located in a landfill site shared by six municipalities in the area. In spite of public opinion demanding its closure, eventually a plan was made to reclaim the previous landfill site, expand it, and recover new areas in order to cope with environmental problems. After discussion, a new intervention was proposed to produce large quantities of biogas that would justify the installation of a cogeneration plant. This plant would produce electricity for sale to the national electricity board, ENEL, as well as hot water for district heating distribution to the adjacent village of Legoli. Thanks to efficient environmental organisation and close working relations with the local population and public opinion, the Provincial Administration Authority decided on the Peccioli site as a "strategic plan". A new expansion project was set up to meet the needs of the provincial plan. Particular attention was paid to environmental issues, extremely important in a region with such a high tourist impact, which explains the high certification requirements imposed.

Belvedere Spa is the privately owned public company which has managed the Peccioli waste disposal plant since 1997. Starting as an "incubator business", it has created a range of business ventures and benefits in the form of a community company set in a small rural area with a population of only 5 000, where it has succeeded in lowering taxes and rates, and in expanding and improving local services. Thanks to a coherent strategy and far-sighted project planning, the company managed to reinforce local social identity and general consensus. One interesting aspect is the ownership structure of Belvedere SpA, whose capital stock belongs by 38% to small stockholders (mainly residents in the Peccioli Municipality), who play an active role in the company's management and profit distribution. Today, following two shareholding investments, the total number of stockholders has risen to 750, with total investments of EUR 4 200 000.

Another success factor, of possible relevance to Tunisia, is the importance to gain support from the local community, listening to its views about how to address environmental problems. If a similar model is to be followed in Tunisia, current centralisation, of decisions may need to be re-examined.

*Source* : www.belvedere.peccioli.net/

It can be expected that the size of investment envisaged under the *Plan Solaire Tunisien* (PST) will help the creation of a larger market for renewable energy and consequent establishment of suppliers of parts and services. For example, the existence of PST has already had some part in the establishment of a PV cell manufacturing plant (PV magazine, 2012). However, at this stage, outside the direct consequences of programmes (for example Prosol), there appears to have been little work done to develop a supply chain, which could create employment through import substitution. It seems likely that better results could be achieved by targeted actions to encourage supply chains, and to link investment in manufacture with research in universities.

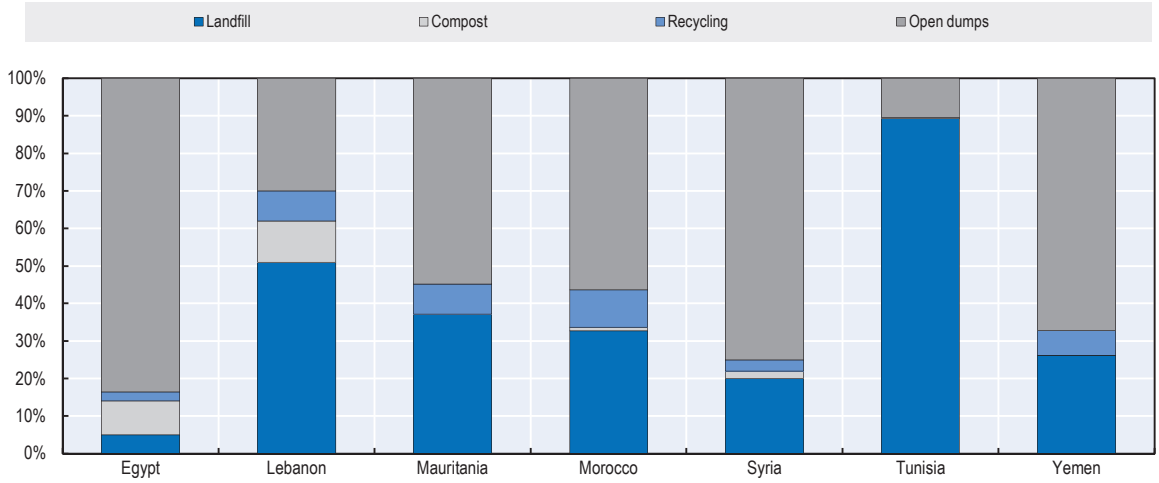
To maximise employment results as part of a strategy to increase the use of renewable energy, programmes such as Prosol should be continued and extended to other forms of renewable energy. As this requires the willing support of the local communities, the current work to support social enterprises will also be important in giving opportunities for expansion in this sector.

#### *Waste and recycling: Realising an existing strategy*

The need to improve the management of waste has also been acknowledged for some time, with the establishment of a managing authority (ANGeD) and a long-term strategy with targets for waste reduction and treatment. The current situation shows good control of

landfills (see Figure 5.3), with 85% of waste ending up in sanitary landfills and only 10% in open dumps (one of the best records for Arab countries). On the other hand only very small amounts of waste are composted or recycled, showing further potential for development (SWEEP-Net, 2012).

**Figure 5.3. Treatment of municipal solid waste, end 2011**




*Source*: SWEEP-Net (2012), "The Solid Waste Management Situation in Mashreq and Maghreb Countries: Update on the Challenges and Opportunities", Solid Waste Exchange of Information and Expertise Network.

Waste management has been guided by a strategy for integrated and sustainable waste management (*Stratégie de Gestion Integrée et Durable des Déchets* – SGIDD) [Integrated and Sustainable Waste Management Strategy]) and a corresponding programme of actions (*Programme National de Gestion Integrée et Durable des Déchets* – PRONGIDD) [National Programme for Integrated and Sustainable Waste Management]). This covers the period 2007-16 and has a set of ambitious targets, for example increasing the level of recycling in plastic waste (30% to 70%), used oil (40% to 85%), used tyres (0% to 50%), and electrical and electronic waste (0% to 70%). While some parts of the programme have stalled since 2011, in part reflecting difficulties with the public consultations needed to plan waste disposal sites, a number of actions have been taken, which may have positive effects on job creation. In particular, the programme envisages:

- A greater involvement of the private sector. A particular example of this is the Eco-lef scheme which gives funding to enterprises that collect and recycle plastic waste. By 2009, the programme had created 310 collection points of which 79% are privately owned, and 231 enterprises under a programme for employment reduction. The amount of waste collected has risen from 1 178 tonnes in 2001 to more than 15 000 tonnes in 2009. Some 70% of this is exported showing that the recycling is performed to an acceptable standard (Plan Bleu, 2011).
- An explicit commitment in the programme to act in partnership with NGOs, which could help to support the interactions with the local communities (ANGeD, 2006).

A major issue is that the responsibility for waste collection is at the commune level and, although this typically constitutes 30% of commune budgets, they are unable to collect local taxes to cover these (SWEEP-Net, 2010). GIZ and other donors have sought to create commune level waste management plans (PCGD) across the whole country. However,

although the process is almost complete, the impact of these plans has been limited, mainly due to a lack of finance to implement the measures identified, as well as a lack of support from the elected municipal councils. It is also difficult to create a consensus in favour of innovative solutions at a time when the country is undergoing such an important political transition.[1]

The ambition to have a fully integrated waste management system is a good one, and continued progress in this direction will at the same time create employment. Nonetheless, such an approach tends to put excessive emphasis on the treatment and disposal of waste, rather than reuse and recycling. While reuse and recycling schemes can be part of a unified system, international experience suggests that they can be run more effectively at a local level, adapting to local conditions, and often operating as social enterprises (UNEP, 2005). This would probably match with the PCGDs, provided that appropriate finance is in place for implementation. An example of the type of projects which could be implemented, drawing from the UK experience, is shown in Box 5.6. It points to the crucial importance to provide adequate training for young people. This can help them to find employment in the wider economy.

### Box 5.6. Furniture Re-use Network in the United Kingdom

The Furniture Re-use Network (FRN) in the United Kingdom supports over 300 non-profit enterprises involved in promoting the re-use of household furniture and electrical appliances. Its members vary in size and scope, but have a common model based on:

- Use furniture and electrical items being donated free of charge (or for a nominal fee), but being collected by the enterprise.
- Refurbishment being performed by the enterprise, often through training of otherwise unemployed people and through this making them more employable (by giving them basic skills, understanding of employability requirements, and experience).
- Sale of refurbished items at low cost to needy families (based on different criteria depending on the area).

The enterprises are run as businesses, but receive implicit subsidy through the fact that the population are willing to donate items free of charge (because of the non-profit nature and social objectives of the enterprise) and through government schemes which support trainees.

FRN estimates that the sector employs 4 000 staff, provides training annually for 15 000 trainees, reuses 2.7 million items of furniture and electrical equipment – and diverts 110 000 tonnes of waste from landfill saving over 380 000 tonnes of $CO_2$.

A typical member of FRN is Changing Lives in Cheshire (CLiC) which employs 22 people, the majority of whom were previously unemployed, and recycled 140 tonnes of furniture and 40 tonnes of electrical goods.

This approach could be used in Tunisia if some key preconditions are met. The business model (obtaining items free of charge) depends upon the fact that the enterprises are recognised to have social objectives and to be non-profit, so a clear framework for social enterprise will be important. Successful enterprises in the network require local leadership and promotion, as well as clear business plans based on knowledge of government programmes for training and other subsidies which may be available. For Tunisia this may mean both specific training and support for those wishing to run social enterprises, and adaptation of government training schemes to fit into this type of operation

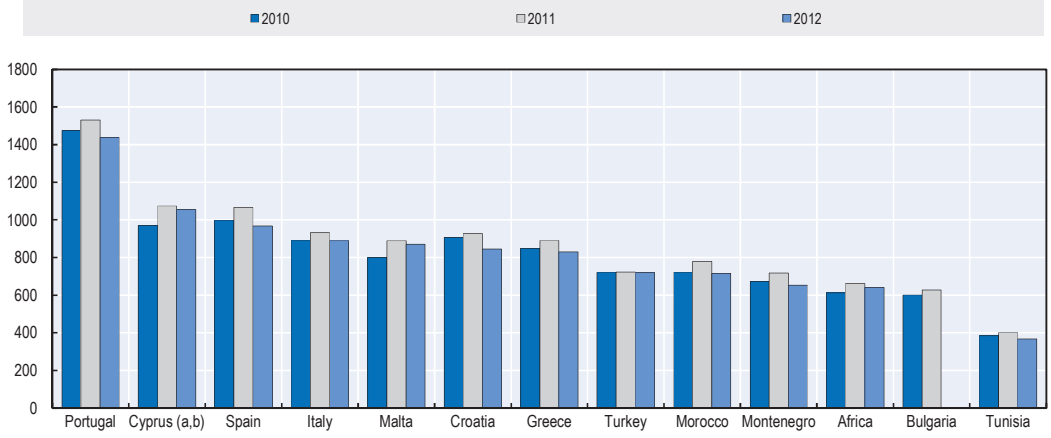
*Source*: Furniture Re-use Network (FRN) at www.frn.org.uk/; and Changing Lives in Cheshire at www.clic-changinglives.org.uk/about-us/.

Tunisia has been a leader in the Arab world in implementing an integrated waste management system. However, this could be taken further by mobilising social enterprises and further mobilising local private enterprises in the field of reuse and recycling. The current strategy and programme for integrated and sustainable waste management is well developed, but it sets very ambitious targets, which will need to be carefully monitored as progress is achieved. As already discussed, a rapid, clarification of the legal status of non-profit organisations would be essential to enable the sector to expand in line with targets. Some initiatives have been created to encourage social enterprise, including an incubator (Lab'ESS). However, a better guided approach might be needed to facilitate the creation of such enterprises in the activities where they have a stronger role to play (i.e. related to waste management) or with a specific format. While the current government seems to have already allocated the funding required, project design remains an issue, as suggested by a reported lack of viable projects.[2]

### *Tourism: a more sustainable approach*

Tourism is an important sector in Tunisia, representing 6.5% of GDP. The bulk of the available capacity rests on mass tourism, based on beach resorts, while opportunities for cultural, sport and eco-related tourism activities remain largely unexploited. As a result, comparison with other Mediterranean countries shows that on average receipts per tourist arrival in Tunisia are low (see Figure 5.4). Despite wide cyclical fluctuations in overall tourism receipts during the past years (-30% in 2011, +24% in 2012), per capita figures have not varied suggesting that the limited diversification of the structure of Tunisia's tourism represents a structural issue, with low value tourism or very short stays being significant. Therefore actions should be implemented to both rejuvenate existing attractions and to find new approaches if the resilience of the sector to cyclical demand fluctuations is to be strengthened.

**Figure 5.4. Receipts per tourist arrival in selected Mediterranean destinations, 2010-12**




*a)* Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

*b)* Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

*Source:* OECD calculations from UNWTO (2013), "Tourism highlights", 2013 Edition, United Nations World Tourism Organisation.

Tourism is a major user of resources, particularly water, and energy, implying that any strategy for the future development of the sector will need to pay due attention to sustainability issues. Welcome actions have already been taken to introduce pricing mechanisms in water consumption and the pay-offs of these efforts are already visible. Indeed, even though overall consumption has grown steadily from 50.2 litres to 63.9 litres per head per day between 1997 and 2006, over the same period of time there have been major changes in tourist consumption per head per night, which has declined, thanks to the tariff changes. Even though more recent data are not available, this pattern suggests the strong responsiveness of the sector to pricing mechanisms on the use of recycling and reduction in usage. More should be done to ensure that overall daily water consumption is affected going forward. Similar encouraging developments can be seen with regards to electricity consumption (which has fallen from a peak of 20 KWh per tourist per night in 2003 to 16.7 KWh in 2005) and gas (1.6 KgEP in 2003 down to 1.4 KgEP in 2006). This progress was not, however, accompanied by a corresponding change in employment, indicating that in itself sustainability may not be a driver of employment growth (MEDD, 2010).

As mentioned previously, sustainability and green issues are not explicit objectives in the current strategy for the tourism sector (Berger, 2012). There are both opportunities and challenges to the development of sustainable tourism in Tunisia. The main drivers supporting a move towards more sustainable tourism practices are numerous and relate to consumer demand shifts; opportunities for increasing competitiveness; the adoption of more coherent policies and regulations to safeguard the environment; technology improvements; private efforts for environmental and social responsibility and natural resource conservation. By contrast, the major cross-cutting barriers involve: information gaps; the lack of a critical mass in industry capacity and networking; fiscal budgetary considerations which reduce the scope for public support of the sector; limited access to private financing; and the need for better aligning vocational education to changing needs. Taken together, these factors highlight the strong potential for greening tourism activities in Tunisia. At the same time, they also reveal that a comprehensive strategic response will need to be put in place in order to ensure that these opportunities are fully met (OECD, 2012c).

Currently the greening of tourism largely rests on voluntary actions undertaken by the private sector, partly encouraged by some by pricing mechanisms, with only a small proportion of hotels and tourist establishments acquiring "eco-label" certification. The Eco-label has been developed in the framework of ISO 14001 and requires progress related to a range of criteria. The growing number of such initiatives suggests that sustainability priorities will play an increasingly important guiding role in the way tourism develops (IPAG, 2014).

Eco-tourism has yet to have a significant impact, but its co-ordinated development could bring income and employment to some of the more remote and disadvantaged areas of the country. Although a strategy has been produced with the aid of GTZ (MEDD, 2008), this does not appear to have been put into practice and there is no overall organisation of eco-tourism. Greater involvement of stakeholders and development of networks will be necessary in order to expand this sector. This will require some adjustments in the current strategic orientations of the government which should be improved by making it more consensual. To this end, some useful practical insights about how to develop an action plan for eco-tourism in Tunisia more aligned with the objectives of a broad range of stakeholders can be drawn from the experience of Bulgaria (Box 5.7).

### Box 5.7. Eco-tourism strategy in Bulgaria

Bulgaria faces similar problems in tourism to those of Tunisia – a concentration of mass tourism on holiday complexes on the beach, but at the same time a vast and largely unexploited natural and cultural heritage from the viewpoint of tourism. Bulgaria produced a national eco-tourism strategy and action plan in 2003. Important lessons come from the *process* of preparing the strategy, which has had an impact on the degree to which it is owned by key stakeholders (regional tourist associations and NGOs, ministries, municipalities, as well as actual tourism providers), with positive results in terms of actual implementation.

The plan was initiated by three ministries (Environment and Water, Economy, including Tourism, and Agriculture and Forests), formalised by a protocol on co-operation, including a strong commitment with regards to implementation. The process was supported by four foreign donors (USAID, UNDP, the World Bank, and the Swiss Agency for Co-operation and Development). Work proceeded at both local and national levels, including:

- Local pilots leading to the formation of local eco-tourism partnerships/associations, and providing a model for other areas.
- Establishment of a national eco-tourism working group, including not only the relevant ministries but also national and local tourism associations and NGOs.
- Setting up thematic working groups at national level (covering IT, product development and marketing, funding, enterprise development, institutional development, and regional development).
- Dividing the region into destination regions based on landscape types and clusters of protected areas and cultural sites.

The process took two years and included 400 individual and group meetings involving 800 different organisations and 140 municipalities. It was backed up by comprehensive market research, efforts to stimulate local interest and support, and extensive media coverage.

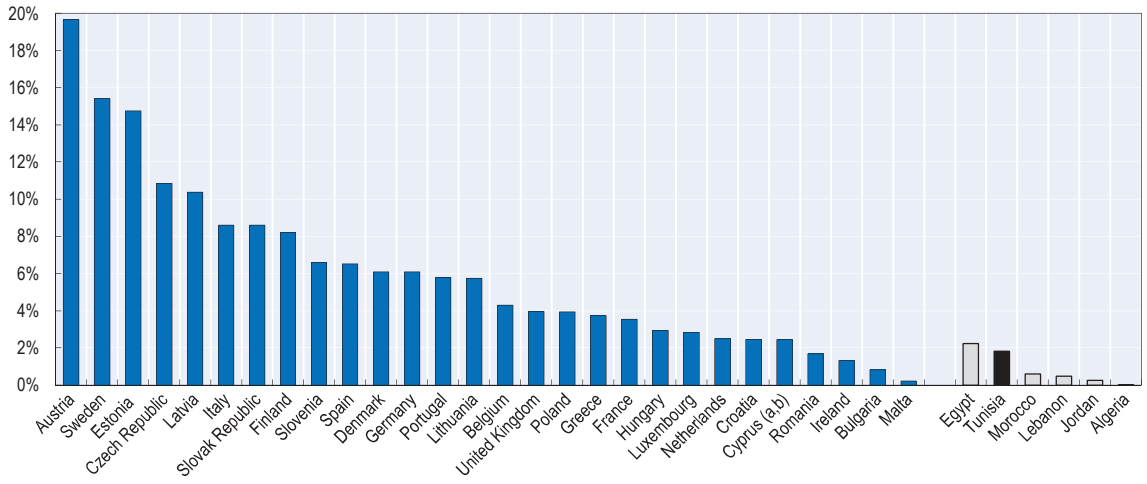
This experience suggests the essential role played by a strategy that aims at achieving the engagement of stakeholders. This contrasts with the situation in Tunisia where, although there is a written strategy for eco-tourism, it lacks detailed involvement of local actors with hardly any strong commitments to implementation.

*Source*: National Ecotourism Strategy and Action Plan for Bulgaria (2003); UNEP/WTO (2005), *Making Tourism More Sustainable: A Guide for Policy Makers*.

### *Agriculture: extending a lead in organic production*

The transition to a green economy clearly involves important implications for agriculture, a sector characterised by high employment levels and strong environmental impacts. Organic agriculture plays an important role in the green economy. This sector has been growing and has a full system of certification, which is recognised by the European Union, thereby allowing access to the EU market. Organic agriculture tends to be a relatively skills intensive activity, both reflecting the search for quality of output and the fact that it is often practised in vulnerable agriculture areas – due to higher temperatures, lower rainfall, and stresses on water supply. Although Tunisia is a respected international player in the field of organic agriculture – such as organic olive oil, for example – it still lags behind most European Union countries in terms of the percentage of agricultural land certified as organic, which suggests a strong case for harnessing new opportunities for expansion (see Figure 5.5).

**Figure 5.5. Percentage of agricultural land certified as organic, 2011**

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*Source*: FiBL & IFOAM (2013), *The World of Organic Agriculture 2013*, Frick and Bonn.

Encouragement of organic agriculture can be done in a number of ways. Policy options range from enabling initiatives (e.g. providing certification and labelling frameworks, research and extension services), to better enforcement (e.g. establishing regulations and standards); and support efforts (e.g. providing financial incentives, bringing together agents along the production chain to establish partnerships and procurement policies). Market-based policy approaches, including certification and labelling schemes are now in place in virtually all OECD countries, as they are in Tunisia. Several governments have undertaken information campaigns and promotional activities to encourage consumption of organic products. In a few countries, notably in Europe, government procurement policies encourage or require the purchase of organic food by public institutions such as schools and hospitals. In many OECD countries financial support is specifically provided to organic farmers, usually on a per-hectare basis. Financial support is still very limited in Tunisia, based on subsidies for equipment and for the process of certification.

While in OECD countries more publicly funded research efforts are now devoted to organic systems it still only accounts for a small share of overall research on agriculture. Some of the results of farm experiences and research into organic farming systems have been adopted by non-organic farming systems (e.g. ways to control pests without chemicals). Governments need to address the externalities in conventional agriculture to provide a better use of resources and a more level playing field for organic systems. Furthermore, policies that reward farming (both organic and non-organic) for any environmental benefits must be based on verifiable evidence, monitored and evaluated, and adapted in the light of changing evidence (OECD, 2003).

There is a strong case for shaping administrative simplification in ways that harness the potential for increasing the land area which is certified as organic. This could have

important feedback effects on the growth of exports, particularly to the European Union. Current challenges relate to the costs of the process of conversion to organic farming (which can take two or three years). A very interesting example of an export-led strategy is provided by Chile, whose experience is outlined in Box 5.8.

Development of agriculture within the EU has been stimulated by the creation of Organic Action Plans at national and regional level. These are usually the result of many years of dialogue between government, the organic movement and the agricultural industry. An important factor in success has been the creation of clear and fully shared goals and timelines – the reason that Austria has the highest share of organically cultivated land within the EU is partly the fact that this is an explicit goal of an integrated action plan (an aim for 20% by 2013). Other targets include percentage of organic products in shops (Finland), percentage of organic products in government canteens (France), share of farms in total number of farms (Poland) and percentage of organic consumption produced nationally (England) (Gonzalvez et al., 2011). Currently Tunisia has an office responsible for organic agriculture, attached to the Ministry of Agriculture (the *Centre Technique de l'Agriculture Biologique* (CTAB) [Technical Center of Organic Agriculture]). A strategy was produced with the assistance of GTZ (GTZ, 2007), but the actual extent to which this strategy is being pursued in practice remains limited. A website was set up to assist the export of organic products but this appears to be out-of-date (still advertising events in 2012).[3]

### Box 5.8. Chile: Promotion of exports from organic agriculture

As in many countries, there was considerable expansion of the organic sector in Chile in the early 21st century – between 1998 and 2004 the area under organic cultivation increased roughly tenfold. What is specific to Chile is the rapid expansion of organic exports, which have increased in value terms by more than four times between 1999 and 2004, with exports going worldwide, particularly to North America and to Europe.

Important factors in this success are:

- The creation of a sectoral organisation (the Chilean Organic Association – AAOCH) to promote the sector and recognised as the representative of the sector by governmental authorities. The Ministry of Agriculture has also established INDAP, the network of small organic farmers. The National Commission of Organic Agriculture was established in 2005 to co-ordinate development of the organic sector. It includes both public and private representatives and is chaired by the Vice Minister of Agriculture.
- A government control system in place, which allows for products to be certified and to fulfil standards required by destination markets.
- Integration of organic agriculture into national agricultural policy, which emphasises quality and sustainability.
- Co-ordination with ProChile (the export promotion agency, under the Ministry of Foreign Affairs), providing market information and support at important trade fairs.

Important lessons for Tunisia relate to the organisation of the sector and its representatives, and the co-ordination with general export promotion. Even though the EU market is close and Tunisian certification is recognised, Tunisia has a relatively low number of exporters and a much smaller proportion of producers export. Administrative simplification combined with better organisation could considerably increase access to foreign markets.

*Source*: UNCTAD-UNEP (2008), "Best Practices for Organic Policy: What Developing Country Governments Can Do to Promote the Organic Agriculture Sector", Prepared under the CBTF Project "Promoting Production and Trading Opportunities for Organic Agricultural Products in East Africa".

Agriculture remains an area with high employment potential and the greening of the economy will encourage a move towards organic production, which may be more labour intensive as well as being more sustainable. A more comprehensive strategy to support organic agriculture, including promotion of export in sectors where Tunisia has a competitive advantage, could increase the importance of the sector.

### *Construction: taking advantage of necessary changes*

Construction is both a major part of the economy and, at the same time, has major environmental effects, particularly with regard to disposal of waste, and the potential for energy efficiency measures. It is not certain that green construction will directly create significant numbers of new jobs, or jobs which will be relevant to youth (see Figure 5.1 above for predictions for Europe and OECD countries). To a large extent the process of change will concentrate on changing or upgrading the skills of existing workers at all levels (from labourers using new materials through to architects who design new buildings). There are, however, likely to spin-offs of jobs in other areas, in particular in the field of waste disposal and recycling, which is examined more generally above. Examination of European markets shows that the demand for green skills in construction is influenced primarily by the regulatory and incentive schemes introduced under energy and environmental policies but that, on the other hand, the number of jobs is not increased by such stimulation (Cedefop, 2012).

In order to stimulate green construction (and consequent improvement of skills in the sector and job opportunities in related sectors), it will be necessary to develop an integrated strategy covering not only skills and employment issues, but also issues such as design, innovation, use of materials, and waste disposal. An example of such a strategy can be seen in the United Kingdom (HMG, 2008). This shows the importance of consultation with the sector itself, include employers and trade associations.

It should be noted that a major driver towards sustainable construction strategies within the European Union has been the adoption of Europe-wide regulations. However, the progress actually achieved has varied across countries, particularly in waste disposal (CRW, 2010). Evidence suggests that information is also an important factor in success, for example in understanding the environmental impact of different approaches and materials, and facilitating the use of recycled materials in construction (Powell and Craighill, 2001).

It is perhaps surprising that the current SGIDD does not identify targets for recycling and disposal of Construction and Demolition Waste (CDW). The ANGeD website notes that construction is a major cause of the proliferation of uncontrolled landfills,[4] and gives details of a pilot project from 2004 to address the problem. However, detailed and up to date statistics appear unavailable. Management of CDW is important, since otherwise, as a major waste stream, it will cause stress on landfills designated for Municipal Solid Waste, while at the same time, there are a variety of possibilities for more appropriate treatment (UNEP, 2005).

The amount of CDW varies widely between countries, but in general prevention and reuse are unlikely to grow based purely on market forces. An example of the degree to which landfill can be avoided is provided by the Netherlands, where CDW is the second largest waste stream. In 2001, 90% of waste was used as secondary materials, with the rest being landfilled or incinerated (van Dijk et al., 2001), and the figure reached 95% by 2006 (CRW, 2010). These figures were achieved by a combination of different regulations as well as support for the industry in moving towards the use of secondary materials. In view of the number of uncontrolled landfills, it would be difficult for Tunisia to move quickly to a highly regulated approach, but development of a strategy for change, including incentives for use of

secondary materials, could have a positive effect on the environment (and release space in existing landfills) while at the same time creating employment in recycling and treatment.

For Tunisia this shows the need for integrated strategies in areas of concern for greening the economy: in construction it will be important to produce a strategy for the sector which encompasses not only improving skills, but also all other aspects of construction, and which is elaborated in consultation with appropriate stakeholders. Issues related to re-use and recycling of construction waste will be important, and need to be integrated into the SGIDD, with appropriate regulations and actions designed to encourage resource efficiency.

### *Common approaches*

These sectors show some common features. In particular, experience of other countries suggests that government action in terms of regulations and incentives can have a major impact on behaviours in these sectors and hence their growth and employment for young people.

This report has evidenced a need for upgrading and adapting the skills supply in Tunisia as it makes the transition to a greener economy. At the same time, however, many Tunisian youth, and particularly the higher educated, face high levels of unemployment and inactivity. A comprehensive set of government actions are therefore required to produce effects in the sectors identified in this chapter through aiming to facilitate job creation and boosting demand for and supply of skills against a background of longer-term changes.

Implementation of changes does, however, present some challenges of co-ordination. There are initiatives which have worked well as being centrally driven (notably Prosol) but on the other hand many of the employment opportunities will happen at a local level and this will require the ability for people to act locally, including through the creation and operation of social enterprises, implying that encouragement of this approach will be important. This requires a degree of flexibility in the way in which training and enterprise support is delivered, and also encouragement of civil society to organise itself.

These factors indicate a need for an overall sustainable development strategy, which involves stakeholders from across government and joins concerns regarding environment with those of employment and social affairs and with economic growth. However, this needs to be complemented by actions in the specific sectors. These actions will again involve many stakeholders and can be used as pilots to learn both about the best way to use green growth for the production of youth employment and to explore better ways of co-operation between different stakeholders.

# Notes

1. www.sweep-net.org/pcgd-tunisia-current-situation.
2. www.babnet.net/cadredetail-75071.asp.
3. www.organic.com.tn/.
4. www.anged.nat.tn/index.php?option=com_content&view=article&id=118&Itemid=248&lang=en.

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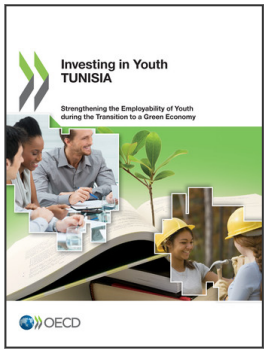


**From:**

# Investing in Youth: Tunisia

## Strengthening the Employability of Youth during the Transition to a Green Economy

**Access the complete publication at:**
https://doi.org/10.1787/9789264226470-en

**Please cite this chapter as:**

OECD (2015), "Creating jobs for Tunisian youth in the green economy: Anticipating skills and developing entrepreneurship", in *Investing in Youth: Tunisia: Strengthening the Employability of Youth during the Transition to a Green Economy*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/9789264226470-9-en



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