

DOES ECOLOGICAL TRANSITION OFFER A POTENTIAL SOURCE OF JOBS FOR YOUNG PEOPLE?

GRET and its partners are exploring new dimensions of youth integration through the JADE Programme Agreement, funded by Agence française de développement. This programme aims to design and test innovative, relevant ways of supporting young people in their overall integration, i.e. not just economic and professional integration, but also social, civic, environmental and climatic integration.*

In this context, GRET and its partners are conducting strategic reflection, drawing on their experiences in the field and on the progress made by research in these areas. A summary of this progress is presented in factsheets drawn up to create a common base of knowledge and reflection on youth and overall integration. In this regard, we should underline the limits of the exercise, which remains dependent on the progress of research on these subjects. With regard to this briefing note, as the concepts of green economy and green jobs are relatively recent, to date, not many studies have been conducted to evaluate their impact on employment. In addition, the majority of these studies focus on developed countries. In order to fill these bibliographic gaps, this briefing note draws largely on GRET's experience, particularly in the areas of agriculture, energy and waste management.

** Jeunesses Actrices du Monde de DEmain (Young People as Stakeholders in the Future)*

In 1970, humans were already using more resources, producing more waste and emitting more greenhouse gas emissions than nature could cope with. Since then, the situation has continued to deteriorate due to demographic growth and the multiplication of activities requiring carbon and resources.

Through the environmental degradation they generate, over-exploitation of the latter and increased levels of pollution risk negating a large part of the progress made in recent decades in terms of development and reduction of poverty. The International Labour Organisation (ILO) estimates that 1.2 billion jobs depending directly on a healthy environment, in particular in the agriculture sector, could be destroyed (WWF, 2020). To address this environmental degradation and its consequences, greater awareness of the necessity of ecological transition — evolving to a new economic and social model aimed at addressing these ecological challenges — has been asserted since the beginning of the 21st century.

In this context, two coincident concepts emerged during the 2010s: the green economy and green jobs. The green economy is “an economy that results in improved human well-being and reduced inequal-

ities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities” (United Nations Programme for the Environment, UNEP). It is characterised by a low rate of carbon emissions, reasonable use of natural resources and social inclusion of workers. In a scenario where global warming would be limited to 2°C by the end of the 21st century, the positive impacts on employment would be significant, particularly for young people. Green jobs are therefore at the core of this green economy and provide a response to the worldwide challenges of environmental protection and economic development.

The ILO defines green jobs as “decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency”. The ILO estimates that ecological transition will contribute to a net creation of 18 million jobs. Although these will not be sufficient to absorb all individuals arriving on labour markets in the coming years, they nevertheless represent considerable potential as a source of jobs, for which it is necessary to prepare young people. It is also necessary to recognise the impacts of this transition on the structure of employment: it will lead to an increase in demand in some sectors and a decrease in others.

Given the urgency of ensuring a sustainable environment, one of the major challenges is to determine

whether the green economy and green jobs can contribute significantly to ecological transition and at the same time be compatible with developing countries’ economic models, most of which are based on growth.

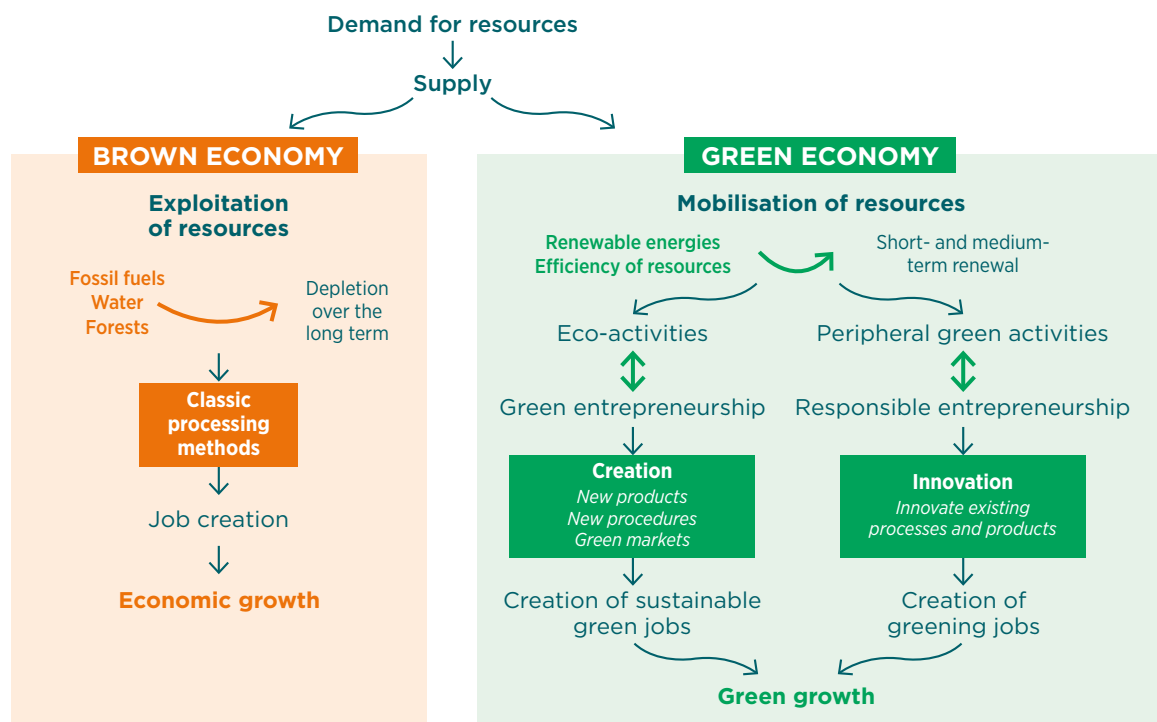
In this context, this briefing note aims to analyse how the green economy and green jobs are developed and included in developing countries’ economies, what prospects they offer young people, and, lastly, what actions can be conducted — by States and civil society organisations (CSOs) and international solidarity actors — to support their development.

THE EMERGENCE OF GREEN JOBS IN DEVELOPING ECONOMIES

INCLUDING GREEN JOBS IN LABOUR MARKETS AND LARGELY INFORMAL ECONOMIES

Ecological transition will have an overall positive impact on employment. Research points to the creation of 15 to 60 million jobs over the next 20 years. The consensus, illustrated by an ILO study mentioned above, estimates that, in a scenario where global warming would be limited to 2°C, 24 million jobs would be created and 6 million destroyed by 2030, i.e. 18 million additional jobs (ILO, 2018). Although this potential for employment must be tempered — it will

FIGURE 1: GREEN ECONOMY VALUE CHAINS (ZOÏ ENVIRONMENT NETWORK, 2018)



Green growth promotes economic growth objectives while defending the inclusion of social and environmental aspects to address major challenges. Contrary to the traditional economy model, green growth is a process that improves the quality of growth.

not be sufficient to cope with the massive arrival of young people on labour markets, particularly in Africa, where every year 10 to 20 million young people aspire to enter the labour force (ADB, 2018) — it nevertheless represents a source of decent employment that should be exploited.

As demonstrated in figure 2, job creation is highest in the renewable energies sector, with an increase of approximately 11 % in the 2°C scenario compared to the status quo scenario, representing around 9 million jobs.

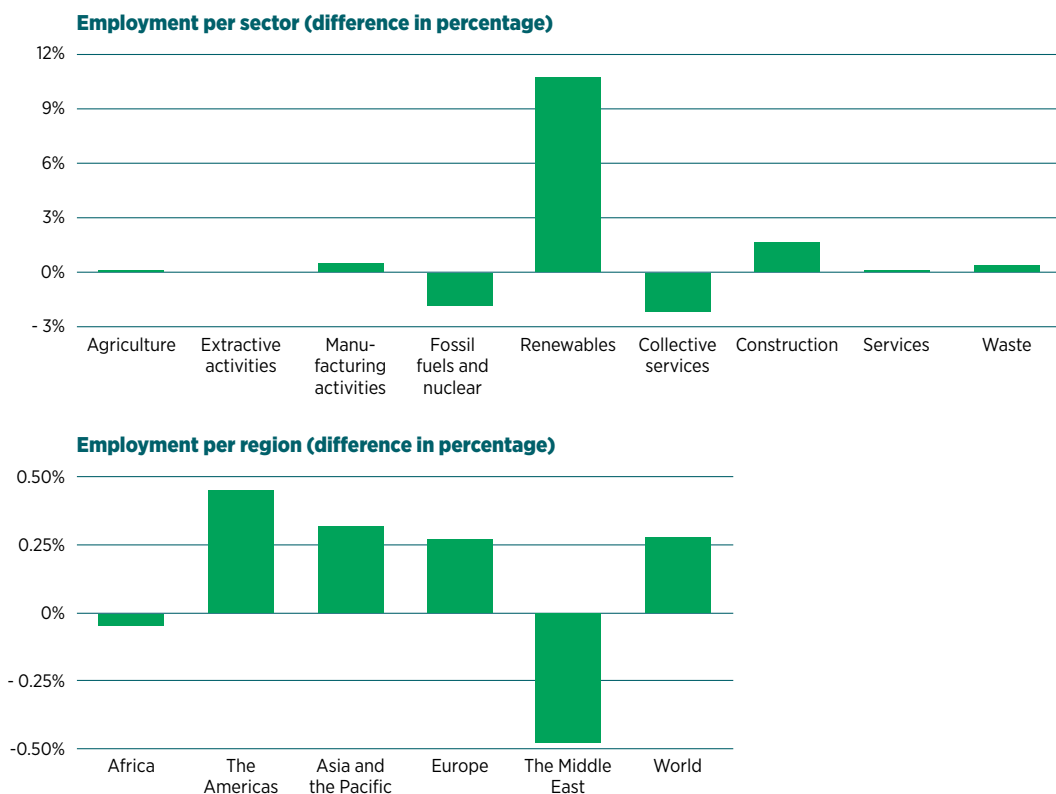
Some sectors, particularly those based on fossil fuels, will experience substantial job losses. This will be the case notably for extractive activities concerning coal, petrol and natural gas, as well as for the automotive industry. In a 2°C scenario, less extraction of these fossil fuels would generate a loss of around 2 million jobs. A 2018 ILO study showed that, out of 163 sectors analysed, only 14 would lose more than 100,000 jobs and only two, oil refineries and oil extraction, would lose at least one million jobs. However, it is important to note that these job losses will impact the Middle East (around 300,000 jobs) and Africa (around 350,000 jobs). Policy changes and the implementation of skills development programmes in these regions would make it possible to mitigate the effects. It is also necessary to now begin taking account of job losses resulting from the transition to a green economy to prepare for this accordingly.

Integrating the green economy into informal markets is a problem that studies have largely overlooked up to now. The majority of the literature and studies analysing the concepts of the green economy and green jobs do not take the informal economy into account. Apart from the fact that this most likely reduces the estimation of employment potential offered by the green economy, the instruments proposed to green the economy are rarely appropriate. It is crucial to realise that policies for transition to a green economy, when not suited to local contexts, can themselves be an obstacle to inclusion, which is one of the drivers of this economy. Supporting informal economic actors rather than stigmatising them is an approach that is more in line with the values upheld by ecological transition.

Some examples show the possibilities of greening informal economies.

The Rosamur waste management project led by GRET in Myanmar aims to build a composting unit in a landfill. This will enable extraction of organic matter and other waste so that it is not reprocessed. This extraction will notably be carried out by informal waste collectors, the majority of whom are young people, in collaboration with the public authorities in charge of managing the landfill. This project aims to enable the cohabitation of formal and informal waste management ecosystems and the inclusion of young people in the ecological transition process.

FIGURE 2: DIFFERENCE IN EMPLOYMENT BETWEEN THE 2°C SCENARIO AND THE 6°C SCENARIO (MAINTAINING THE STATUS QUO) BETWEEN NOW AND 2030 (ILO, 2018)



GROWTH SECTORS AND THE GREEN ECONOMY

The ILO identifies eight economic sectors that will be largely transformed by ecological transition. Here we will focus on three of these, which are particularly important in terms of sustainable development: agriculture, energy and waste management.

■ Agriculture

Since the 1970s, agricultural production has tripled while the increase in cultivated land across the world remains limited to 30 %. Yet, growth in productivity slowed down during the 2010s, whereas in 2050, a 70 % increase in agricultural production compared to 2000 (ILO, 2012) will be necessary to feed a world population estimated at 9.2 billion. Therefore, there are many challenges for the agricultural sector: meet future demand for food by improving its productivity, ensure its ecological sustainability and favour the creation of decent jobs.

Agribusiness is a substantial polluter. It is the main anthropic source of greenhouse gas emissions — methane and nitrous oxide — with 13.5 % of worldwide emissions (change in land use, livestock, use of fertilisers), one of the main causes of soil degradation (over-exploitation, salinization), of desertification and drinking water scarcity (poor crop management) and biodiversity degradation (Alimenterre, 2015). The environmental degradation generated by agriculture will have significant repercussions on its productivity and

could pose a threat to world food security and farmers' situations. The transition to sustainable agriculture requires a holistic approach combining technical solutions and policy instruments that are incentivising, an approach based on in-depth understanding of local contexts in order to adopt appropriate solutions.

Research has highlighted the potential for job creation in the area of sustainable agriculture. Because it has more substantial labour requirements, it enables the creation of more direct jobs than traditional agriculture (Sharma & Pandove, 2010). In India, Indian farmers growing organic cotton earn 200 % more than “traditional” farmers (Greenpeace, 2010). Although these studies only cover cotton growing, they nevertheless tend to demonstrate significant employment potential.

In terms of prospects for young people in agriculture, we should also mention market-gardening, which offers many opportunities: it can provide employment near cities — where the majority of young people would like to work — and income that is often higher than that of traditional farmers, through the production of products with high value-added and the possibility of combining it with livestock farming. In addition, for young people with limited capital, market-gardening makes it possible to have an activity that is quickly profitable.

In general, agricultural and para-agricultural jobs do not appeal to young people, which is an obstacle to achieving the employment potential set out above. In this context, the implementation of systems for aware-

YOUNG APPRENTICES WORKING IN THE MANGO VALUE CHAIN IN MALI, IMYETA PROJECT



ness-raising and guidance towards sustainable agriculture jobs, ahead of the Guidance-Training-Integration continuum, is a significant means of reducing young people's reticence vis-à-vis this major sector.

■ Energy

Today, world energy consumption is dominated by fossil fuels. Petrol accounts for 33.6 % of commercialised energy consumption, coal 29.6 %, natural gas 23.8 % and nuclear just 5.2 % (BP, 2021). The challenges faced by the energy sector can be divided into two categories: scarcity of resources, particularly petrol, on the one hand and the environmental consequences generated by the use of fossil fuels on the other.

Energy transition can be achieved notably by more efficient use of energy and replacing fossil fuels with renewable energies such as wind and solar energy. A series of policy instruments were implemented in recent decades to favour this transition and the International Renewable Energy Agency (IRENA) estimates that doubling the proportion of renewable energies in the energy mix would make it possible to create almost 15 million jobs by 2030.

Implementation by development actors of projects to improve access to energy and energy efficiency in developing countries could contribute significantly to energy transition. For example, in Senegal, GRET is solarising economic actors' infrastructure and training technicians to maintain these installations. In Mauritania and Mali, training courses on the installation and maintenance of solar equipment are also emerging as part of field projects implemented by GRET and its partners among others.

■ Waste management

Every year, more than 11 billion tons of waste are collected across the world and decomposition of the organic portion of this waste is responsible for approximately 5 % of world greenhouse gas emissions. The waste management market, from collection through to recycling is estimated at 410 billion dollars per year (IIED, 2014). This estimation does not include the informal market that processes the majority of waste in developing countries.

Sustainable processing of waste, through reduction of waste production, re-use and recycling, enables energy and water savings, and a decrease of greenhouse gas emissions and air, water and soil pollution. Although national governments have a role to play in the greening of waste management by developing the recycling market, local authorities play the most important role by defining rules governing waste collection and sorting.

However, it should be noted that waste processing practices vary from one country to another. In general, industrialised countries have formal and largely automated systems, while developing countries tend to rely on the informal sector.

There is a high potential for employment in the area of waste management, both in the formal and informal sectors. 1.2 million jobs could be created by 2030 in the United States if 75 % of waste produced by countries was re-used via recycling and composting. Similarly, 600,000 jobs could be created during the 2020s if Europe recycled 70 % of its waste (ILO, 2012).

In developing countries, the informal waste processing sector employs the largest number of people. In addition, considerably larger quantities of waste are recovered by informal collectors than by formal businesses.

The World Bank estimates that approximately 26 million workers are employed in the informal waste management sector in developing countries (WB, 2018). The acceleration of urbanisation in these countries, particularly in Africa and South-East Asia, and the growing quantities of waste produced are likely to increase this sector's employment capacity.

In its waste processing projects, GRET prioritises the implementation of a hybrid system drawing on the formal and informal sectors. This system is illustrated in Congo for example, with the Promaiss, Gicod and Jagov projects. These projects aim to collect waste produced and transport it to a site where it will be valorised or stored according to its nature and have enabled the emergence of a new trade: pre-collection operator (PCO). PCOs propose a pay-for door to door service, connecting municipalities and subscribers,

TABLE 1: COMPARISON OF WASTE RECOVERY BY THE INFORMAL AND FORMAL SECTORS IN SIX CITIES (CWG, 2011)

CITY	INFORMAL SECTOR		FORMAL SECTOR	
	TONS	% OF THE TOTAL	TONS	% OF THE TOTAL
Cairo	433,200	13%	979,400	30%
Cluj-Napoca	8,900	5%	14,600	9%
Lima	9,400	0.3%	529,400	19%
Lusaka	12,000	4%	5,400	2%
Pune	-	0%	117,900	22%
Quezon City	15,600	2%	141,800	23%



whether these are individuals, professionals or administrations. As part of these projects, PCOs ensure the implementation and smooth running of an effective waste management service.

In conclusion, this analysis of growth sectors in the green economy points to the fact that these sectors have a potential that does not yet meet needs in terms of access to employment, in particular for young people, but that is nonetheless promising. Achieving this potential firstly requires definition of criteria that are suited to social and geographic contexts, categorising green sectors. Although the European Union and the Climate Bonds Initiative have implemented taxonomies defining such criteria, the former is only applicable in Europe, while the latter is mainly intended for the private domain. Coordination between all stakeholders, workers, States, international organisations and international solidarity organisations, is also necessary. Raising awareness among the general public and decision-makers on environmental issues and the concepts of the green economy and green jobs — largely unknown within society — is also essential to ensure the sustainability of programmes over the long term.

Lastly, it is crucial that international solidarity organisations include green criteria as part of their project engineering, in order to identify growth trades for which development of training would enable beneficiaries to access decent jobs, and be attentive to the purpose and practices of the projects they engage in — as a waste management project could be considered as green but use waste burying practices that are not.

SUPPORTING GREEN JOBS THROUGH SKILLS DEVELOPMENT AND GREEN ENTREPRENEURSHIP

DEVELOPMENT OF GREEN SKILLS: A KEY ELEMENT

Skills development is an essential element to enable professionals to adapt to the needs of the green economy. Ecological transition, because it transforms the production system, requires evolution of jobs to become more environmentally respectful. Adjusting training frameworks will make it possible to improve

the employability of workers arriving onto transforming labour markets.

It is particularly necessary for workers in the agriculture, energy and waste management sectors — in which new green jobs are appearing and where established professions are evolving — to adapt their skills. In this context, teaching and apprenticeship systems will have a significant role to play in training workers. All the more so as the green economy's skills requirements are higher than those of the traditional economy (PAGHC, 2017).

Although informal training processes also play a considerable role in skills development — with workers acquiring a large part of their skills through practice — they cannot ensure the development of all the consequences required by ecological transition.

Despite this adaptation imperative, the majority of States have not established links between their strategy for a sustainable environment and their policy in terms of qualification (ILO, 2018). This is particularly the case in developing countries, where the institutional skills development mechanisms necessary for ecological transition have yet to be implemented. At this stage, the skills gaps — which can be explained by the emerging nature of the economy and the trades comprising it — are a major obstacle to ecological transition.

WHAT ROLE CAN GREEN ENTREPRENEURSHIP PLAY?

The Organisation for Economic Cooperation and Development (OECD) defines green entrepreneurship as entrepreneurship that aims to have a positive social and environmental impact. It encompasses less polluting economic activities, technologies, products

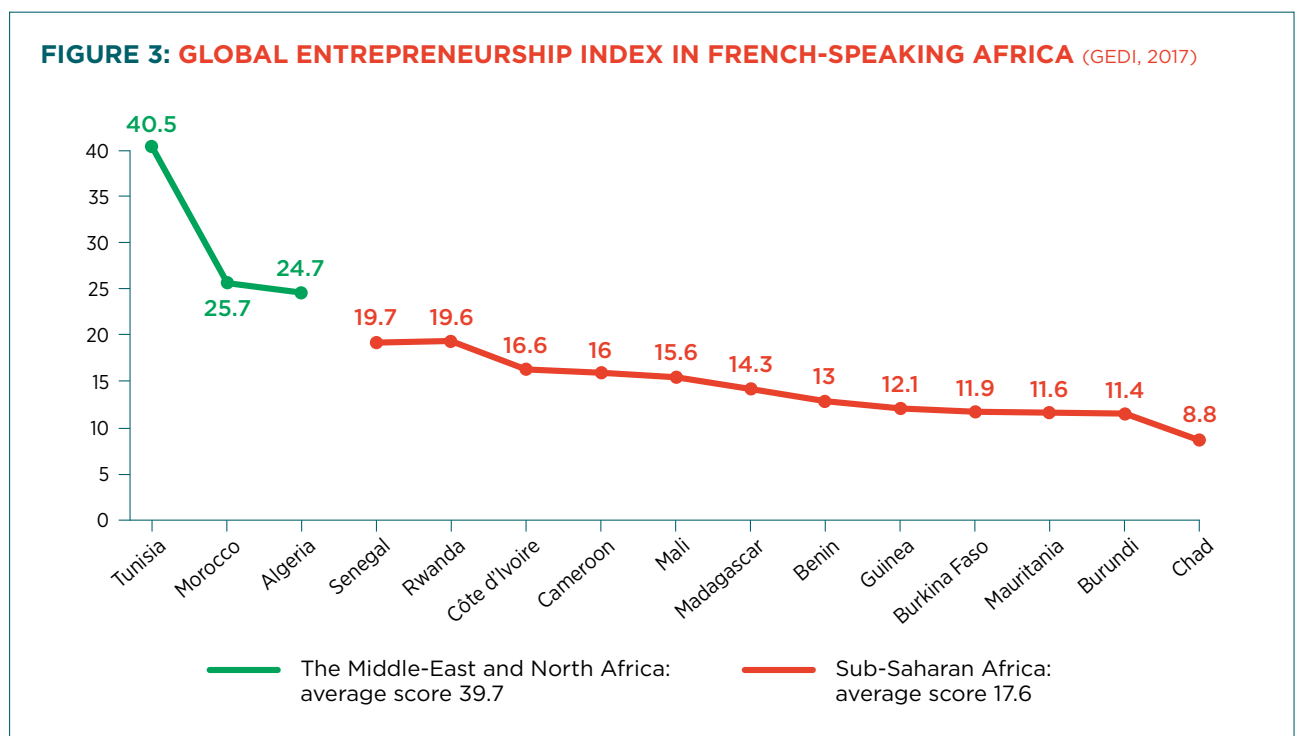
and services aiming to sustainably reduce greenhouse gas emissions and carbon footprint, minimise pollution and save resources.

The OECD considers that support for green entrepreneurship is a crucial lever for implementing ecological transition. As for UNEP, it estimates that the private sector could provide more than 80% of the capital necessary to cope with the consequences of climate change. In this context, green entrepreneurship would be decisive to support developing countries in their transition to a green economy. UNEP also posits that businesses that will be able to anticipate this transition and adopt a sustainable and responsible approach developing goods and services with low environmental impacts will be able to make substantial profits.

Green entrepreneurship is therefore in line with the needs of developing countries and could enable the creation of decent jobs, particularly for young people.

A study conducted by the OECD in 2011 shows that 72% of young Africans are attracted by entrepreneurship and consider it to be a good career choice. However, the number of entrepreneurs in Africa is significantly lower than world averages, particularly in sub-Saharan Africa, as shown in figure 3.

Numerous challenges must therefore be addressed so that developing countries can fully exploit their entrepreneurial potential. The main green entrepreneurship actors, i.e. public authorities and the private sector, must work together in order to ensure good development of this ecosystem, support entrepreneurial activities and work alongside entrepreneurs in the development of their projects. Moreover, the concept of green entrepreneurship — as with the concepts of green economy and green jobs — is still largely unknown in developing countries. It is notably the



responsibility of the above-mentioned actors to raise knowledge on the opportunities it offers. Lastly, there is currently no incentive for green entrepreneurship, as no environmental standard has been adopted in this sector to define what is “green” and what is not.

However, at a time when world awareness on environmental issues is increasing, institutional frameworks in developing countries are increasingly favouring the creation of green businesses and international organisations are providing growing support for these initiatives to ensure the transition to a green economy. While UNEP posits that investing 2 % of worldwide GDP in ten key economic sectors would make it possible to green the entire economy, green entrepreneurship offers job and development opportunities, particularly at local level, where it favours short marketing circuits and valorises local know-how and products.

CONCLUSION

The amplitude of the ecological transition process is likely to be similar to that of the industrial revolution. Its negative effects, particularly in terms of job destruction, which will emerge before its benefits, should not be overlooked.

If it is well managed, notably to develop ecological human capital, the transition to a green economy could nevertheless offer a potential for the creation of decent jobs that according to current estimations will certainly not be able to absorb all young people arriving on job markets — particularly in developing countries —, but that will enable many young people to access good quality sustainable jobs, notably in sectors such as agriculture, energy and waste management. ■



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LEARN MORE



- > [“What a Waste: An Updated Look into the Future of Waste Management”](#) (online), World Bank, 2019.
- > [“Green entrepreneurship in French-speaking Africa”](#) (online), Zoï, 2019.
- > [“Informal and green”](#) (online), IIED, 2014.
- > [“Nature hires: how nature-based solutions can power a green jobs recovery”](#) (online), WWF, 2020.
- > [“Production de charbon vert au Cameroun”](#) (online), Initiatives Climat, 2019.
- > [“Promouvoir le capital humain écologique”](#) (online), Plateforme pour la promotion du capital humain écologique, 2017.
- > [“Statistical review of world energy”](#) (online), BP, 2021.
- > [“Greening with Jobs”](#) (online), ILO, 2018.
- > [“Working towards sustainable development”](#) (online), ILO, 2012.
- > BUGNOT Fabrice, [“Le système agro-alimentaire industriel dérègle le climat”](#) (online), Alimenterre, 2015.

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Page 1: Electricity training in Mauritania, Safire project.